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HOW TO MODULATE.



P. H. SHEPARD.

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Harvard University



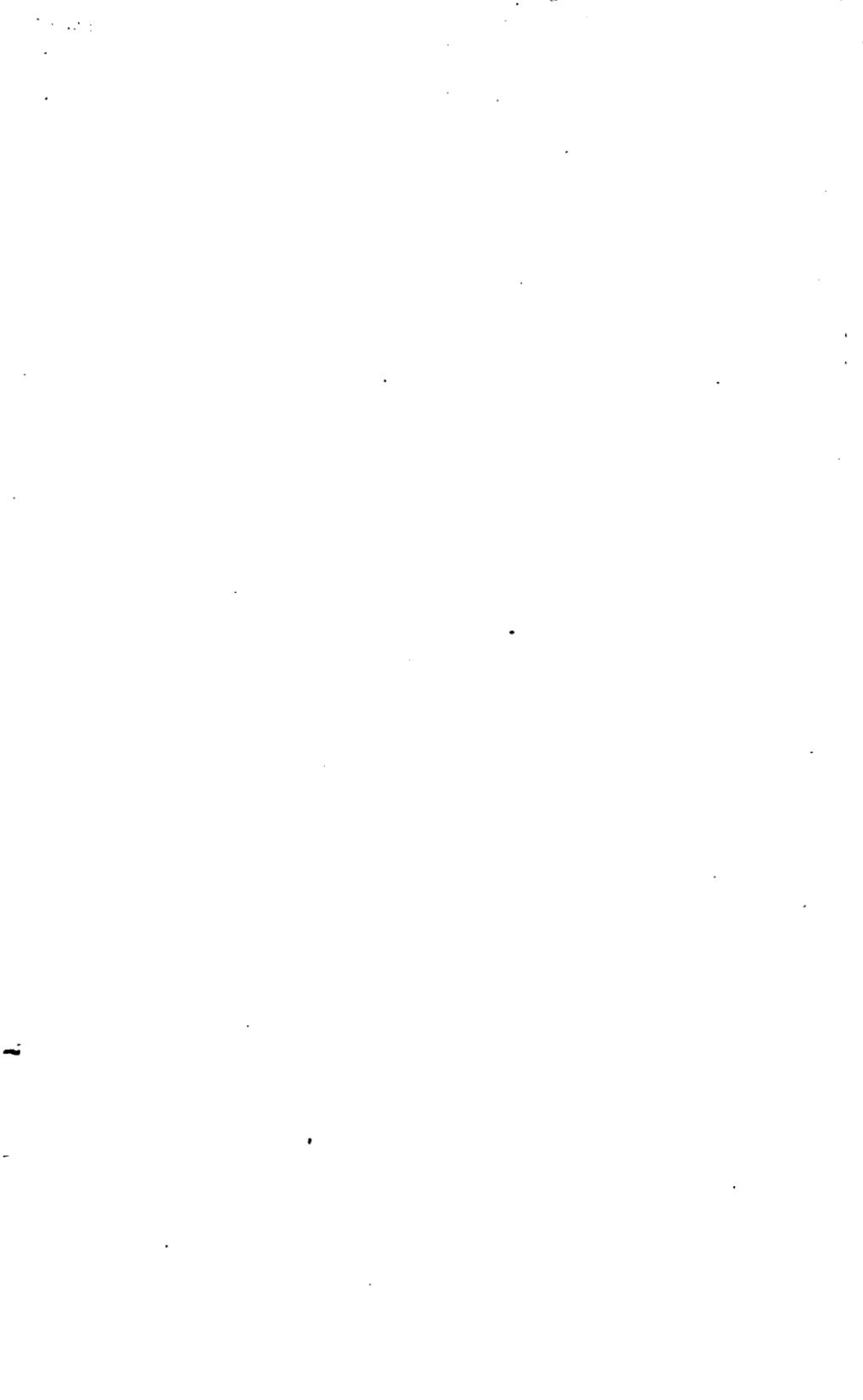
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HOW TO MODULATE.

A SIMPLE AND SYSTEMATIC GUIDE

IN

MODULATING FROM ANY KEY TO ANY OTHER:

AND A REVIEW

OF THE

PRINCIPLES OF ARTISTIC MODULATION

AS APPLIED IN

GENERAL COMPOSITION.

BY

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AUTHOR OF *CHURCH MUSIC AND CHOIR TRAINING*, *HOW TO STUDY
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PREFACE.

The object of this little work is to systematize, as far as possible, the principal means of Modulation and make them *practically* useful to the student. Though it might be said that to modulate by rule would be most unmusically, still it must be conceded that some principle should underlie all Modulation, else it would become mere wandering from chord to chord till chance brings about the connection with the right key. To place these principles in such a simple form as to be easily comprehensible, and to show their application to all possible cases is the aim in view.

Careful examination will show that the considerations here advanced are not so much New Principles as a Broader Application of principles already known and partly applied, or applied without system.

One of the leading features of the work, the System of Attendant Chords, may seem somewhat novel to the musician. By referring to the Article on "Modulation" in Grove's Dictionary of Music, Vol. II, pp. 350—351, and the Article on "Harmony", Vol. I., p. 682, line 21 et seq., and comparing with Chapters I. and IX. it will be seen that theoreticians have already bestowed some thought upon the subject. Helmholtz also suggests the use of Seventh chords to facilitate the connection of triads, which would otherwise have no direct connection with each other. (See "Sensations of Tone" by Helmholtz, translated by Ellis, 2nd Ed. p. 357.) Thus it becomes apparent that the

musical world is ready for a systematic presentation of the subject, and the way is already prepared for such a work as is here attempted. The System of Attendant Chords will be found an important auxiliary to the Tonic Sol Fa method of Harmony, as the union of the two produces a practical method of Transposition. This is more fully developed in a little work, "How to Study Transposition" now in preparation.

As generally taught, the Closing Formula is used to establish the key *after* the Tonic triad of the new key has been reached. It is here developed as a *regular means of Modulation*, equal in importance and superior in smoothness of effect to that of the *Dominant* Seventh chord. Beethoven gives frequent illustration of this device.

The student of Theory who is not content with a merely superficial view of the subject, will find that several of the principles here developed — particularly the Attendant chords and the treatment of the Chords of the Augmented Sixth — have a most important bearing not only upon Modulation but upon Musical Theory in general.

In our standard works on Theory we have fine examples of Modulation, but there are few principles advanced and these do not apply in every case. Therefore it has been concluded that the Art of Modulation is a matter of *experience and taste*, and that the subject though it *may be learned, can not be taught*. This little work shows that it may be reduced to a system and thoroughly mastered in a short time.

LEIPZIG, September 1889.

BETHEL, CONN., U. S. A.

TABLE OF CONTENTS.

Preface. Pages III—IV.

Chapter I. Pages 1—12.

Introduction: Natural Relationship of Chords: Particular Relationship of Chords constituting Tonality: The Harmonic Chord or Series: Analysis of the Relation of Dominant to Tonic: Attendant Chords: Example from Mendelssohn: Application to Modulation: Formulae for Direct Modulation.

Chapter II. Pages 12—14.

Modulation by Means of the Dominant Seventh Chord: Closing Formula: Exercises.

Chapter III. Pages 14—17.

Modulation by Means of the Closing Formula: Rhythm in Connection with Modulation: Exercises.

Chapter IV. Pages 17—23.

Modulation by Means of the Diminished Seventh Chord: How to recognize any Fundamental Harmony: Enharmonic Notation: Analysis of Diminished Seventh Chords: Diminished Seventh Chords common to Four Keys: Similarity between Dominant Harmony and Attendant Chords.

Chapter V. Pages 24—41.

Modulation by Means of the Augmented Sixth Chords: Their Origin and Natural Resolution: Three Methods of Modulation by Means of these Chords: Augmented Sixth Chords on the Minor Second of the Scale: A Broader Application of the Augmented Sixth Chords.

Chapter VI. Pages 42—43.

Chromatic Sequence of Dominant Seventh Chords: Chromatic Sequence of Diminished Sevenths.

Chapter VII. Pages 44—47.

Compound Modulation: Modulation through a Common Triad: By Means of a False Cadence: Various other Methods.

Chapter VIII. Pages 47—61.

The General Principles of Modulation as deduced from Practical Analysis: Examples from Standard Theorists: Examples from Beethoven: The Principles of Artistic Modulation: To remove Original Tonality: Through Relative Keys: Variety in the Means of Modulation: Musical Ideas undisturbed by Modulation: Establishment of the New Key: Plan of Modulation and Harmonic Skeleton: Tabular Statement of the Above: The Use of Suspensions: The Arrangement of Accents: Relative Keys: Natural and Extraneous Modulation: Modulation from Secondary Triads of Original Key: Enlargement and Ornamentation.

Chapter IX. Pages 62—66.

A More Complete View of the Attendant Chord System: Subordinate or Interpolated Keys: Example from Mendelssohn: How to analyze the Harmonic Structure of a Composition: Resolution by Enharmonic Change: Unprepared Entrance of Attendant Chords: The Tendency of Modern Music.

CHAPTER I.

Introduction: Structural Relation of Chords: Tonality: System of Attendant Chords: Application to Modulation.

§ 1. Modulation is the passing from one key to another, and is effected by the use of one or more chords characteristic of the key to which it is desired to modulate.

Considerable difference of opinion exists in regard to what constitutes a Modulation, some theorists holding that the appearance of a chord foreign to the key is evidence that a Modulation has taken place, while others contend that there is no Modulation until the original key has been utterly abandoned. These opinions have more to do with the classification of Modulations than with the *practical considerations*, which are, *How to connect with the new key*, and *How to establish it*.

In general the Tonic triad of the new key should be heard on the accented beat of a measure, preceded by the Dominant harmony on an unaccented beat. But even this is not sufficient to give a strong impression of the key if the next succeeding chords are in a different key.

It is presumed that the student is already familiar with the elements of Musical Theory, therefore the conditions necessary for Modulation will not be exhaustively reviewed. It will be sufficient to remark that *those chord connections are most intelligible which have one or more notes in common*. This should be carefully observed, as upon this principle rests much that is here advanced for consideration. To illustrate, connect the triads *D F[#] A* and *G B D*. Here it will be seen that *D* is the common note, serving as the connecting link between the two chords.

§ 2. The standard works on Theory tell us that in modulating, if there is no direct connection between two keys, a chord should be interposed which is related to both keys. But the young student needs more explicit guidance than can be obtained from such a general rule and this necessity of *accurate direction* leads to the consideration of

The System of Attendant Chords.

§ 3. The Modern Harmonic System is absolutely Chromatic: we can start from any tone and form a scale, a complete key, or a circle of keys, modulating round to the starting point.

Resulting from the construction, a chord has a *natural connection* with many other chords, *irrespective of key*. For example the following chords will be found to have a natural relation to the triad of C Major by having one or more notes in common with it: the Major triads of G, F, E, A, A \flat , E \flat , the Minor triads of G, F, E, A, etc.

When a chord is part of a key, it sustains *particular* relations with the other chords which compose the key, as Dominant to Tonic, Supertonic to Dominant, etc.

Thus we see that a chord has a *twofold relationship*; a) To the chords with which it has a *natural connection*, *irrespective of key*; and b) As an essential part of a key and necessary to complete the feeling of Tonality. By means of the first, *different keys are connected through the relationships of the individual chords*: by means of the second, Tonality is secured.*)

In forming a key, a *certain tone* and a *certain triad* are made to sustain particular relations as *Tonic* with the other tones and triads that make up the key: but this inter-relation of the chords composing the key *does not affect the relationship of the individual chords with the rest of the harmonic system*. In other words, the above mentioned relationships a) and b) can *both exist at the same time* without conflicting with each other.

The same chord may belong to several keys, but in whatever key it may be, its progression is governed by the same laws.

§ 4. The most intimate relationship between chords which can be found in Music is that between the chords called Dominant and Tonic: if the first is heard **) we instinctively desire the second, and if disappointed there is said to be a False Cadence. Examination shows the cause of this relationship to be much deeper than the laws of Tonality: in fact it goes back to the Scientific Basis of Music, as the following will show.

If any tone is sounded there will be heard a series of higher tones called *Harmonics*, sounding very faintly with the primary tone or

*) In referring to these relationships throughout the book, a) is called "Structural connection", and b) "Tonality".

**) To be characteristic of the Dominant, the 7th from the root should be present in the chord.

Generator.*.) This series is called the Harmonic Chord or Harmonic Series, and furnishes many important laws for the construction of chords. Let us examine it, taking the note *C* as the generating or primary tone. In Fig. 1 are seen the various notes which are heard with the tone *C*.



The first notes in this series, omitting duplicates, are the 5th and the 3rd from the root, forming with that note the common triad *C E G*. Looking further in the series we find the notes *D* and *B*, which with the note *G* form the Dominant triad in the *key* of *C*. But it should not be forgotten that this Harmonic Series is derived from a simple tone, *C*, and therefore no considerations of Tonality can bear upon the relations of the two chords just mentioned. Thus it becomes clear that the triads *C E G* and *G B D* not only have a natural relation by means of the common note *G*, but that they have a *peculiarly* close relation for the reason that all the notes of the latter are found among the near Harmonics of *C*. Another and more deeply scientific reason of this close relationship lies in the fact that there is less discord between the Harmonics of *C* and those of *G*, than between those of *C* and of any other note. As the common triad is the *representative* of the Harmonic Chord derived from any note, it follows that there is a closer relation not only between the notes *C* and *G*, but between the chords derived from these notes, than between *C* and other notes and chords.

In the Harmonic Series in Fig. 1 is the note *A*, and if the Series be extended the note *F* will also be found, giving, in connection with the triad of *G*, the fullest form of Dominant harmony, the Minor Ninth chord.

*) These Harmonics can not usually be heard till the ear has been trained in this direction. The student may however, prove their presence by a simple experiment at the piano. Pressing the key *G* (indicated in Fig. 1 by the 3rd note) gently down that there may be no tone produced, and holding it with the right hand, strike the key *C* (indicated by the 1st note) with the left hand. After holding *C* for a short time it may be released, when the note *G* will be clearly heard until the right hand is also released. The experiment may be repeated, taking the various notes of the Harmonic Chord with the right hand while the left hand strikes the low *C* as before. Science proves that these notes are produced by Sympathetic Resonance with tones that are already present in the tone *C*. (For further exposition of "Harmonics" the student is referred to "Sensations of Tone", by Helmholtz.)

It was remarked above that the most natural progression of the chord *G B D F* is to the chord *C E G*, *whether the key of C is the prevailing key or not*. Now as the association of these two chords is so peculiarly close and *entirely independent of Tonality*, the chord *G B D F* may be called the *Attendant or Associate chord of C.**)

If other notes are taken as generating tones, precisely similar results will be achieved, giving chords which have the same relation with each other and with the primary tone as was shown above.

§ 5. *WHEN ANY NOTE IS TAKEN AS THE TONIC OF A KEY, ITS ATTENDANT CHORD BECOMES THEREBY THE DOMINANT.**) IN CONSTRUCTION AND FORM THE DOMINANT AND THE ATTENDANT CHORDS MUST CONSEQUENTLY BE SIMILAR.*

The only difference lies in the fact that the Dominant has been called to take a more prominent place in a key as the chord most closely related to the Tonic. Therefore we say that what the Dominant is to the Tonic the Attendant chords are to their Primary chords; and to find the Attendant chord of any note, we need simply to answer the question, "What would be the Dominant in the key of the same name"? For instance, the Attendant chord of *C* must be the same as the Dominant chord of the key of *C*.

As Dominant harmony appears in the various forms of Triads, Seventh chords, Ninth chords (either Major or Minor), Diminished Seventh chords and Diminished triads, Attendant chords may appear in the same forms, as illustrated in Fig. 2a, where the Attendant chord of *C* is shown.

Fig. 2a.

[A] Triad. [A] Seventh Chord. [A] Minor 9th. [A] Major 9th. [A] Dim. 7th. [A] Dim. triad.

*) When referring to these two chords (the Attendant and the chord with which it is so closely associated) they will be called the *Attendant chord* and its *Primary chord*.

**) The usual statement that the relationship of these chords is due to the fact that they were chosen as Dominant and Tonic of a key, might be reversed, saying that the reason this chord is chosen as Dominant is on account of its peculiarly close natural relation to the Tonic.

***) In this form the Root, *G*, is omitted.

Wherever an Attendant chord is found in this book, it is indicated by [A] placed under it. The same sign is also used in the text as an abbreviation. Like Dominant chords, Attendant chords can have False Cadences. (See Beethoven's Symphony No. 1, Andante, 44th and 45th measures *from the end of the movement.*) Thus it will be seen that [A] chords have all the properties of Dominant harmony.

§ 6. When notes are grouped together to form a scale or key, Attendant chords can be derived from the individual notes in the same manner as before, as the natural relationships of the individual notes and triads are not affected by grouping them together in a key. The [A] chord of the Seventh degree is not used, because the triad on that degree can not sustain the relation to its [A] chord of *Tonic* to Dominant, as it is a Diminished triad, *) which could under no circumstances be considered as a Tonic triad. For the same reason the [A] chord of the *Second* degree in Minor is also excluded. The other degrees of the scale may have their [A] chords, as shown in Fig. 2b. As the relation to their Primary Chords is most clearly seen when the [A] chords are in the form of chords of the 7th, they should first be studied in that form.

Fig. 2 b.

Key of CMaj. [A] of I, I, [A] of II, II, [A] of III, III, [A] of IV, IV,

[A] of V, V, [A] of VI, VI.

The [A] chords of all degrees excepting the 7th in Major, and the 2nd and 7th in Minor, are freely used in the works of the classical composers, as illustrated in Fig. 3 by an example taken from Mendelssohn's

*) If the [A] chord be taken in the form of a Diminished 7th, it might be followed by the triad on the Seventh degree, the progression being *similar* to the case of one Diminished 7th following another. Instead of passing to a Diminished 7th it proceeds to a Diminished triad, which is *practically* the same. (See Fig. 2c). It is however, not recommended.

Fig. 2c.

“Spring Song.” Here it will be seen that the System of Attendant Chords furnishes a most simple explanation of those harmonies occurring so frequently, which are foreign to the key without really leading to a Modulation.*)

Fig. 3.

1 2 3

I [A] of II [A] of V V [A] of VI

4 5 6

VI V⁷ I [A] of II II [A] of IV

7 8 9

IV IV II

10 11 12

II⁷ V⁷ dim.

*) In this respect the [A] chords are similar to the “Klammeraccoarde” or Parenthetical chords, which Herr Piutti has so ably developed in his “Regeln zur Musik-Theorie”. (Leipzig, 1883.)

The musical score consists of two staves. The top staff is in treble clef and the bottom in bass clef. The key signature is A major (no sharps or flats). The score includes the following markings and labels:

- grazioso**: A performance instruction for the first measure.
- Ped.**: Pedal instruction, indicated by a vertical line and a bracket.
- pp**: Dynamics (pianissimo).
- ***: A small asterisk above the bass staff.
- etc.**: An abbreviation for "etcetera" placed near the end of the bass staff.
- V⁷**: Roman numeral indicating the dominant seventh chord in the first measure.
- I**: Roman numeral indicating the tonic chord in the second measure.

In the above example, the harmonies are so "spread" that to find a full chord we must look at half of a measure. This example begins and ends in the key of *A*, but is full of digressions which are too short to be called Modulations. For instance, the chord in the latter half of the first measure is clearly out of the key as it has *A*♯ and *G*♯, but it might be the Diminished Seventh chord on the Seventh degree in the *key of B* Major or Minor, or *what is the same thing*, the [A] chord of *B* (which is an interval in the *key of A*) in the form of a Diminished 7th. In the same way the chord in the 2nd measure having *D*♯ is not, strictly speaking, in the key, but might be the Dominant 7th in the *key of E*, or the [A] chord of *E*. So also in the latter half of the 3rd measure the chord having *E*♯ and *D*♯ might be the Dominant 9 in the *key of F*♯, or the [A] chord of *F*♯. At the close of the 4th measure the chord is the Dominant 9 of the *key*. In the latter part of the 5th measure the chord is the [A] of *B* in the form of a 7, and at the end of the 6th measure the [A] of *D*, in the same form. The harmonies of the following measures belong to the principal key, the Roman numerals indicating upon which degree of the scale they are founded: in the 10th measure is a chord of the 7th on the Second degree with its 5th accidentally lowered.

Now while the chords indicated by [A] are distinctly outside the key, there is no Modulation,*) although the relation of each to the next succeeding chord is that of Dominant to Tonic or what is the same, of an Attendant to its Primary chord.

Chords of this kind play a very important part in musical composition, on one hand giving variety to the harmonic structure without really departing from the key; and on the other, giving us the means if we desire it, of *modulating easily and directly to any key*.

*) There would be a Modulation if the foreign key should be established: by using the Dominant of a foreign key we *touch that key* and need only to "confirm" the Modulation to make it complete. But as we here continue in the principal key without having established any other Tonality, we can only say that the foreign keys were suggested, or touched in a passing way.

Application of this Principle to Modulation. The Connection of Triads.

§ 7. The first step in Modulation is to learn to connect *any two Major or Minor triads*, after which it becomes easy to connect any two *keys*.

Upon trial it will be found that *if there is no direct connection between two given chords by means of a common note, the connection can be made perfect by the use (interposition) of one or both Attendant Chords.** Thus it becomes possible to connect *any two chords* without considering whether they belong to the same key or to different keys.

For example, let us connect the chord of *C* with the chord of *F \sharp* . As there is no common note to connect the two triads, we will write them with their Attendant chords, which we will place *between* the given triads, indicating the Attendant chords by [A].

The second chord in Fig. 4a is the [A] chord of *C*, the third chord that of *F \sharp* . Now as according to § 4 there is a close *natural* connection between the 1st and 2nd chords, and between the 3rd and 4th chords, and as there is a close connection between the 2nd and 3rd chords *by means of the two common notes*, it is evident that the connection between the triad upon *C* and that upon *F \sharp* has been effected by the *interposition of their respective [A] chords*.

Fig. 4 a.



[A] of *C*, [A] of *F \sharp* ,

*) When the [A] chords are taken in their fullest form, that of the Minor Ninth chord, it will be found that there is a *common connecting note between any two [A] chords*. In Fig. 4c are represented all the [A] chords used in Music, all others being merely enharmonic forms of these. By comparing any two chords in this illustration a note common to both chords will be found, and often there will be several. For example, the note common to the 1st and 2nd chords is *A \flat* ; to the 1st and 3rd chords, *G*; to the 1st and 4th, *F* (also *D*); etc. Thus it is plain that if one [A] chord should not be sufficient, the use of two *must* form the connection.

Fig. 4 c.



§8. APPLICATION OF THIS PRINCIPLE TO MODULATION. 9

Usually only one [A] chord is necessary, as for example in connecting the triads of *C* and *DMaj.*, shown in Fig. 4 b.

The image shows a musical staff with two measures. The first measure is in C major (G-C-E) and the second is in D major (G-B-D). A bracket labeled "[A] of D" connects the two measures, indicating the use of an attendant chord (A) to facilitate the modulation. The bass line shows a change from C to D.

Fig. 4 b.

Thus it will be seen that although two chords may not have a common note to connect them, when we consider their Attendant chords a connecting link will become apparent.

Exercises.

Before proceeding, the student should exercise himself by writing two unrelated triads (having no common note), and finding the connection between them, using one or two [A] chords as may be necessary. For example, connect the triads of *D⁷Maj.* and *GMaj.*; *DMaj.* and *A^bMaj.*; *FMin.* and *F[#]Maj.*; *CMin.* and *EMaj.* etc. The connection is often made by means of the *Enharmonic Change*, described in Chap. IV. If only one [A] chord is used, that of the triad to which we progress will usually be the better one for reasons mentioned in § 12.

(These preliminary exercises are of the highest importance and *should be mastered before proceeding* if the pupil is to easily and intelligently follow the teachings of the succeeding chapters. In general the *exercises at each step must be thoroughly practiced both in writing and at the keyboard before passing to the next step*. Simply reading this book will not give skill in modulating unless the prescribed exercises are faithfully used.)

To Connect two Keys.

§ 8. As different keys are connected by connecting individual chords (see § 3), i. e. by connecting some chord of the original key with some one in the new key, the connection shown in Fig. 4 a may be taken as a method of passing from one *key* to another instead of from one *chord*

to another. Then we would have the formula $\frac{\text{I}}{\text{Old key}}, [\text{A}], \frac{\text{I}^*)}{\text{New key}}$, [A] representing in this case *two Attendant chords, the most that can ever be required.* (For example see Fig. 63. See also § 27.)

Having seen that the progression of an [A] chord to its Primary chord is precisely the *same as that of a Dominant to its Tonic*, we may draw the logical conclusion that *IF WE CAN PASS TO THE TONIC*

*^o) This formula is explained in § 9.

OF A FOREIGN KEY THROUGH ITS DOMINANT CHORD, WE CAN PASS TO ANY OTHER MAJOR OR MINOR TRIAD OF A FOREIGN KEY BY USING ATTENDANT CHORDS.

(This should be especially noticed as the principle plays a most important part in Modulation.)

As these Attendant chords are so easily found and have a most intimate relation with their Primary chords, they will prove a simple, practical and correct means of connecting the original key not only with the Tonic but with *any desired chord* of the new key.

§ 9. With the assistance of the Attendant chords it becomes possible to formulate the principal methods of Modulation, giving a most thorough and comprehensive view of the whole subject.

If we modulate by means of the Dominant Seventh chord of the new key, we must connect the original key and the *New Dominant*: if we modulate through some other chord of the new key, *we must connect with that chord*. Upon this plan the Formulae are constructed.

FORMULAE FOR MODULATION

From Any Key to Any Other.

By Means of

a) The Dominant $\left\{ \begin{array}{l} \text{I}^* \\ \text{Old key} \end{array} \right.$, [A], $\frac{\text{V}^7, \text{I}}{\text{New key}}$. (See Chap. II.)

b) The Closing $\left\{ \begin{array}{l} \text{I} \\ \text{Old key} \end{array} \right.$, [A], $\frac{\text{IV}, \text{I}^4, \text{V}^7, \text{I}}{\text{New key}}$. (See Chap. III.)

c) The Diminished $\left\{ \begin{array}{l} \text{I} \\ \text{Old key} \end{array} \right.$, [A], $\frac{\text{VII}^0, \text{I}}{\text{New key}}$. (See Chap. IV.)

d) The Augmented $\left\{ \begin{array}{l} \text{Proceed according to a) to} \\ \text{V}^7 \text{ of key which is a semi-} \\ \text{tone higher than the desir-} \\ \text{ed key. Resolve this chord} \\ \text{as an Augmented Six Five} \\ \text{Chord on the Minor Sixth} \\ \text{of the desired key, and com-} \\ \text{plete the Cadence.} \\ \text{I} \\ \text{Old key} \end{array} \right.$ (See Chap. V.)

* Any other Major or Minor triad of the old key may be substituted for this triad.

EXPLANATION OF THE FORMULAE.

The terms Old key, and New key, are used to indicate briefly that the chords designated by the Roman Numerals belong to the key *from* which or the key *to* which, we modulate.

The Roman Numerals indicate upon which degree of the scale the chord (a common triad when not otherwise indicated) is to be taken.

[A] indicates that an Attendant chord is to be inserted if necessary. Sometimes two [A] chords may be employed with advantage.

Augmented chords are indicated by the sign ', Diminished chords by ⁰, affixed to the Roman numeral.

To make the application of these formulae perfectly clear, we will illustrate the use of the terms in a practical Modulation from *C* to *F*♯ Major, using the formula a).

The key of *C* thus becomes the "Old key", and *F*♯, the "New key". $\frac{\text{I}}{\text{Old key}}$ represents the triad on the first degree of the scale of *C*, and $\frac{\text{I}}{\text{New key}}$ the triad on the first degree in *F*♯, while $\frac{\text{V}^7}{\text{New key}}$ represents the Seventh chord on the Fifth degree in *F*♯, i. e. the Dominant Seventh of the key. Let us represent this in notes. (See Fig. 5).

Fig. 5.

$\frac{\text{I}}{\text{Old key}}$, [A], $\frac{\text{V}^7}{\text{New key}}$, $\frac{\text{I}}{\text{New key}}$.

Here we have everything but the chord represented by [A], which is the chord necessary to connect $\frac{\text{I}}{\text{Old key}}$ and $\frac{\text{V}^7}{\text{New key}}$. This connecting chord has been explained in § 7. (See also § 10).

CHAPTER II.

Modulation by Means of the Dominant Seventh Chord of the New key.

§ 10. According to the heading of this chapter we must pass through $\frac{V^7}{\text{New key}}$, therefore the first problem is to connect $\frac{I}{\text{Old key}}$ and $\frac{V^7}{\text{New key}}$. Should there be a note common to both chords, we can proceed at once to the desired chord. If not, the *Principle of Attendant Chords* will supply the connection. Thus the formula becomes $\frac{I}{\text{Old key}}, [A], \frac{V^7, *) I}{\text{New key}}$. Note that [A] may indicate the [A] chord of *either* the Old Tonic or the New Dominant, or even *both* if necessary.

To illustrate, let us modulate from *C* to *F \sharp* .

Now the formula becomes more specific: $\frac{I}{\text{Old key}}$ represents the triad on *C*: $\frac{I}{\text{New key}}$ represents that on *F \sharp* , and $\frac{V^7}{\text{New key}}$ the Dominant Seventh chord on *C \sharp* . As there is no connecting note between the chord on *C* and that on *C \sharp* , we will resort to the Attendant Chords, and discover that we can use *either* the Attendant chord of *C* or that of *C \sharp* .

Writing the chords and the formula together shows plainly the connection, using first the [A] chord of $\frac{I}{\text{Old key}}$ and then the [A] chord of $\frac{V}{\text{New key}}$, as represented in Figs. 6 and 7.

Fig. 6.

I, [A] of I, $\frac{V^7}{\text{New key}}$, I.

Fig. 7.

$\frac{I}{\text{Old key}}, \frac{[A] of V, V^7, I}{\text{New key}}$

*) An [A] chord can resolve to a Seventh chord instead of to a simple triad, on the ground that one Dominant Seventh chord can resolve to another. (See Chap. VI.)

§ 11. In every case of Modulation through the Dominant Seventh of the new key, there will be a feeling of incompleteness. This will disappear if after the new Tonic has been reached, the so called "Closing Formula" is added. This formula consists of the chords on I, IV, I^6 , V^7 , I; on II, V^7 , I, or of a few similar chords, which serve to *establish the key*, and give a feeling of rest. This is illustrated in Fig. 7 a, where the same Modulation as in Fig. 7 is given, with a slightly different leading of the voices on account of the Closing Formula following.

Fig. 7a.

I, [A] of V, V^7 , I, II, I^6 , V^7 , I
 Old key New key Closing Formula

Exercises.

For the first exercises, the student will start from the Tonic triad of *C* and pass to all other keys *through the new Dominant Seventh chord*, using the [A] chords if necessary to make the connection. Next he will proceed from *C* to every other key; then from *D*, and so on till he has used *every key as a starting point*, from which to modulate to *every other key*. To gain the fullest benefit, the pupil should practice modulating both at the keyboard and in writing.

Attention must be paid to the *correct leading of the voices*. A Modulation which is harsh in one position and with a certain leading of the parts, may often be much improved and softened by a change of position and different movement of the voices.

§ 12. It will be found that while many of these Modulations are harsh in spite of a good leading of the voices when made *directly* through the new Dominant Seventh, *they may be made very pleasant by the use of one or both [A] chords.**) The student must not fear to take the chords in their different inversions to induce a smooth leading of the voices.

A good effect depends also upon a proper arrangement of the accents, as shown in the following chapter.

*) After having studied Chap. IV the student may repeat this Chapter using the [A] chords in the form of Diminished Sevenths, by which the Modulations may often be made still more effective.

If only one [A] chord is used, the second will usually prove the better of the two, as it progresses to its Primary chord in the same manner as a Dominant chord to its Tonic.

§ 13. When we use the [A] chord of the new Dominant, we touch the *key* of the Dominant of the new key, as we make use of the Seventh chord on its (the Dominant's) Fifth degree. Thus in Fig. 7, the new key is $F^{\#}$ and the key of its Dominant is $C^{\#}$. Now it will be seen that the [A] chord, having $B^{\#}$, is like the Dominant Seventh chord in the *key of $C^{\#}$* . Dr. Stainer says in his "Compositon" that a new key should be entered through *related chords or related keys*. Here it is plain that we have entered through a related key, — that of the Dominant. Thus it appears how the *System of Attendant Chords* fills the requirements of related chords or related keys in Modulation.

CHAPTER III.

Modulation by Means of the Closing Formula.

§ 14. As shown in the last chapter, the ordinary succession of chords called the Closing Formula, consisting of chords upon I, IV, I^4 , V^7 , I, of the scale, is sufficient to establish a key.*¹) If this principle is applied to Modulation, the result will be a smooth and easily intelligible transition from one key to another.

It is presumed that the student can easily and quickly form the Tonic, Sub-dominant and Dominant Seventh chords, in all inversions and in *every* key. It is also imperatively necessary that he should think of these chords as belonging to the key to which he wishes to pass.

In modulating with the help of this formula, we must of course introduce these characteristic chords, I, IV, I^4 , V^7 , I, of the New key.

The application of the principle is as follows: — *We pass from* $\frac{I}{\text{Old key}}$ *to one of the chords in the above formula, and as soon as we touch one of these chords we are in the new key, needing simply to complete the Closing Formula.*

It is better to get into this formula as early in its course as possible; but to pass directly to the Tonic of the new key would defeat our ob-

*¹) See § 16.

ject of gaining a smooth and *gradual* Modulation; therefore we will adopt the next chord, the Sub-dominant, as the one *through which* we will pass. Now our immediate object is to connect $\frac{\text{I}}{\text{Old key}}$ with $\frac{\text{IV}}{\text{New key}}$, giving the complete formula, $\frac{\text{I}}{\text{Old key}}, [\text{A}], \frac{\text{IV}, \text{I}^6, \text{V}^7, \text{I}}{\text{New key}}$.

For illustration, let us take the Modulation from *C* to *F \sharp* . As there is no common note to connect $\frac{\text{I}}{\text{Old key}}$ and $\frac{\text{IV}}{\text{New key}}$, we will resort to the Attendant chords. Again we find the connection can be made in two ways, as shown in Figs. 8 and 9.

NB.

Fig. 8.

I, [A] of I, IV, I^6 , V^7 , I
Old key New key

Fig. 9.

I, [A] of IV, IV, I^6 , V^7 , I
Old key New key

Note that in Fig. 8 the [A] chord is derived from $\frac{\text{I}}{\text{Old key}}$; in Fig. 9, from $\frac{\text{IV}}{\text{New key}}$.

At NB. the Dominant Seventh is led upward, the chord being enharmonically changed to an inversion of an Augmented Six Five. This will be fully explained in Chap. V.

§ 15. It will be interesting to observe here what a remarkable influence the *Rhythm* has upon a succession of chords in a Cadence, whether in connection with Modulation or not. It is known that to

form a Perfect Cadence, the Dominant chord should fall on an unaccented part of the measure, and the Tonic chord on the accented. In modulating by means of the Closing Formula, we simply form a Cadence in the New key, therefore we must observe the conditions of *Accent* if we desire to have a smooth effect. Note the difference between Fig. 10 and Fig. 10 a, which is the same progression *harmonically*, with the rhythm changed to fulfill the conditions necessary to form a Perfect Close.

Fig. 10.

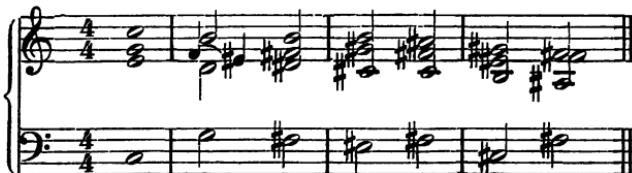


Fig. 10 a.



Fig. 10 b shows the same harmonic progression in $\frac{3}{4}$ time, which allows a still smoother arrangement of the accents.

Fig. 10 b.



Exercises.

The student should exercise himself in the same manner as was recommended at the close of Chap. II, using *every key as a starting point* from which to modulate to *every other key*.

§ 16. The formula, I, IV, I^4 , V^7 , I, is not the only one possible. The succession, II, V^7 , I, is equally effective in establishing the feeling of a close and is therefore as good as the one used in this chapter.

If this form is desired the full formula will be $\frac{\text{I}}{\text{Old key}}, [\text{A}], \frac{\text{II}, \text{V}^7, \text{I}}{\text{New key}}$. Other forms may also be used, as a foreign key can be entered through any one of its triads. The reason that the triads on the Fourth and Second degrees are generally used is because they lead more directly to a close and are therefore more suitable for a closing formula.

CHAPTER IV.

Modulation by Means of the Diminished Seventh Chord on the Seventh Degree of the New key.

§ 17. The Diminished Seventh on the Seventh degree is looked upon as an incomplete form of *Dominant* harmony, that is, having its root on the Dominant and resolving like the Dominant Seventh to the Tonic.



In figure 11 the chord upon *G* is a Dominant Seventh with the Minor Ninth added, resolving to the Chord on *C*. If the note *G* is omitted, we have a Diminished Seventh chord, but it is considered as *derived from the root G* (indicated in Fig. 12 by \sim), and therefore having the same resolution. Thus we say a *Diminished Seventh chord is an incomplete form of Dominant harmony*.

In the chord of the Dominant Seventh with Minor 9th added, the dissonant intervals are the Minor 7th from the root and the Minor 9th. In the Diminished Seventh chord, the same notes form the dissonances, appearing as a Diminished 5th and a Diminished 7th from the Bass of the chord. These dissonances should be resolved in the same manner as if the root were also sounding.

§ 18. A most puzzling feature of this chord is its capacity for En-harmonic Change, by which the same combination of tones, *differently expressed*, may belong to different keys. To make this clear we will approach the subject indirectly, first showing how to recognize the tonality of a chord by its notation.

How to Recognize any Fundamental Harmony.*)

Consider for a moment the formation of the Major Scales in the different keys: *G* has one sharp, which is the leading note, *F \sharp* . *D* has one sharp in addition to this, *C \sharp* , the new sharp being the leading note. *A* has still one more sharp, *G \sharp* , which is also the leading note, and it will always prove that the *last new sharp forms the leading note*. Therefore we can recognize any key with sharps in this way.

In order to find a simple means of discovering this distinguishing feature (the leading note), we will compare the different keys, calling that key which has most sharps in its signature the "sharpest" key; thus the key of *B* will be called sharper than the key of *E*, because it has five sharps in its signature, while *E* has but four. In the same way we may compare the *individual notes*, calling *B* a sharper note than *E*. (To discover the degree of sharpness of any note, simply answer the question, "How many sharps [or flats] in the *key* of the same name?")

As flats are the opposite of sharps, we may consider when comparing flat keys that the one with *fewest* flats is the "sharpest" key, and the same for the individual notes themselves. Thus we may say that *B \flat* is sharper than *E \flat* , because in the key signatures *B \flat* is represented by two flats, while *E \flat* has three.**)

Now let us form a table showing the notes in their *order of sharpness*, progressing from left to right.

Flats	Sharps
7	10
6	9
5	8
4	7
3	6
2	5
1	4
0	3
<i>C\flat</i>	2
<i>G\flat</i>	1
<i>D\flat</i>	
<i>A\flat</i>	
<i>E\flat</i>	
<i>B\flat</i>	
<i>F</i>	
<i>C</i>	
<i>G</i>	
<i>D</i>	
<i>A</i>	
<i>E</i>	
<i>B</i>	
<i>F\sharp</i>	
<i>C\sharp</i>	
<i>G\sharp</i>	
<i>D\sharp</i>	
<i>A\sharp</i>	
etc.	

Remember that in this plan, which is simply a convenient manner of *comparing the notes*, the object of which will be at once shown, the *smaller the number of flats*, or the *larger the number of sharps*, the "sharper" will the note be considered. (At this point the pupil should compare various notes in order to *practically* comprehend the above.)

In recognizing any Fundamental chord, the application of this plan is shown in the following rule, quoted from Dr. Ouseley's "Treatise on Harmony": —

§ 19. "In every Fundamental chord, the leading note is the sharpest note to be found."

('If there is a Minor Ninth in any chord, that Ninth will be the flattest note: otherwise the "flattest" note in a Dominant Seventh chord will be the Seventh.')

*) This is highly important for students of Harmony and Analysis. §§ 18 to 20 are partly derived from, or at least suggested by Dr. Ouseley's "Treatise on Harmony".

**) This will be quickly understood by writing out in full the signatures of the keys *in the order given in the above table*. It will be seen that each successive signature is formed by *removing one flat from*, or *adding one sharp to* the signature of the preceding key.

The help of this rule is not needed to find the triads, which are recognized by placing the chord in Thirds, when the lowest note will be the root. In any Fundamental Seventh chord or Ninth chord, the leading note is a Major Third from the root of the chord. Being able by means of the above rule to find the *leading note*, we are thus enabled to discover the root of the chord (which is a Major Third lower); and having the root, it is easy to describe the chord.*)

By means of this rule we can also recognize any Diminished Seventh chord, as it is a Dominant Ninth chord with the root omitted.

§ 20. Let us analyze a Diminished Seventh chord. We find it composed of three Minor Thirds placed one above another, or if inverted, of two Minor Thirds and an Augmented Second. Notice that even in the inversions, the tones are *always at an equal distance from each other*.

It is known that a note may be written in different ways by means of the Enharmonic notation; thus *F* may be also written as *E*♯ or *G*♭. Let us write a Diminished Seventh chord, and changing it by enharmonic writing, observe the effect.

Fig. 13.

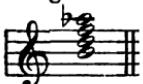


Fig. 14.



Fig. 15.

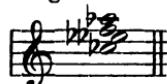
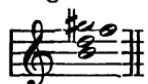


Fig. 16.



Comparing the notes of the chord in Fig. 13 to find the "sharpest" note, *B* is represented by 5 sharps (see table on opp. page) and *D* by 2 sharps, while *F* and *A* have no sharps whatever. Therefore *B* is the "sharpest" note, and according to the above rule must be the leading note. As the leading note in any key is an interval of the Dominant harmony, being a Major Third from the root, it will be seen that the root of this chord is *G* and that the *whole* chord is a Dominant Seventh with the Minor Ninth added, resolving naturally to the Tonic, *C*. Therefore the chord in Fig. 13 is the Diminished Seventh chord on the Seventh degree of the key of *C*, resolving to the Tonic triad.

By the same process of reasoning, in Fig. 14 the sharpest note, *D*, is the leading note; therefore *B* is the root; and *E* is the key.

In Fig. 15, *F*, having the *fewest flats*, is the leading note; *D* is the root; and *G* is the key.

In Fig. 16, *G* is the leading note; *E* is the root; and *A* is the key. It should not be forgotten that these four chords (Figs. 13—16) *rest upon the same tones*, being merely enharmonically written.

*) In comparing the notes of a chromatically altered chord to find the "sharpest" note, the pupil must carefully distinguish altered notes which are *essential intervals* of the chord, from those which are merely chromatic passing notes.

§ 21. To prove this still more fully, all the Diminished Seventh chords are given in Fig. 17, with their roots and the keys to which they belong.

Fig. 17.

7.

1

3

2.

Roots	<i>G.</i>	<i>A\flat.</i>	<i>A.</i>	<i>B\flat.</i>	<i>B.</i>	<i>C.</i>	<i>D\flat.</i>	<i>D.</i>	<i>E\flat.</i>	<i>E.</i>	<i>F.</i>	<i>F\sharp.</i>
Keys	<i>C.</i>	<i>D\flat.</i>	<i>D.</i>	<i>E\flat.</i>	<i>E.</i>	<i>F.</i>	<i>G\flat.</i>	<i>G.</i>	<i>A\flat.</i>	<i>A.</i>	<i>B\flat.</i>	<i>B.</i>

These chords are divided into four groups, each group consisting of three chords. The reason for grouping and numbering them becomes apparent when we notice that all the chords indicated by the same figure, but with different letters, as $\overbrace{w.}^1$, $\overbrace{x.}^1$, $\overbrace{y.}^1$, $\overbrace{z.}^1$, rest upon the same tones, being merely *inverted* and *enharmonically written*. Thus it will be seen that *there are in reality but three different Diminished Seventh chords*, — that is, different in sound, each of which belongs by *enharmonic writing* to *four different keys*.

§ 22. The reason this chord can belong to different keys is, that while the *tones* remain the same, by enharmonic writing each note in turn is expressed so that it will be "sharper" than the others, thus becoming the leading note and requiring a different note as the root of the chord, and therefore a different resolution.*)

§ 23. Having now a thorough understanding of the Diminished Seventh chord, we will proceed to the Modulations, first noting the principal facts deduced from the foregoing: —

- 1) The Diminished Seventh is looked upon as an *incomplete* form of Dominant harmony, the root being omitted.
- 2) By enharmonic writing a Diminished Seventh chord may belong to four different keys.
- 3) As shown in § 5, an Attendant chord may appear in the form of a Diminished 7th, which frequently gives a smoother connection than when it is in the form of a Dominant 7th.

**) Being Dominant harmonies, chords of the Diminished 7th frequently have False Cadences.* This fact explains the common progressions of the chord shown in Fig. 17a, as well as many others occurring less frequently.

Fig. 17a

By the terms of the Modulation we are to use the Diminished Seventh chord on the Seventh degree of the new key, therefore the first process will be to connect $\frac{\text{I}}{\text{Old key}}$ and $\frac{\text{VII}^07}{\text{New key}}$. If there is a connecting note we may proceed directly from one to the other: if not, we will resort to the Attendant chords. It is clear, that if an [A] chord of $\frac{\text{VII}^07}{\text{New key}}$ is used, it must be that [A] chord, which resolves to $\frac{\text{V}}{\text{New key}}$ because VII^07 is merely an *incomplete form* of V, as explained above.

Let us modulate from C to F \sharp . The Formula is $\frac{\text{I}}{\text{Old key}}, [\text{A}], \frac{\text{VII}^07}{\text{New key}}$. In this case there is no connecting note, therefore we will try the [A] chords and find three ways of connecting, using either [A] chord without the other, or by using both together, as shown in Figs. 18, 19 and 20.

Fig. 18.



$\frac{\text{I}, [\text{A}] \text{ of I}}{\text{Old key}}, \frac{\text{VII}^07, \text{ I}}{\text{New key}}$.

Fig. 19.



$\frac{\text{I}}{\text{Old key}}, \frac{[\text{A}] \text{ of V, VII}^07, \text{ I}}{\text{New key}}$.

Fig. 20.



$\frac{\text{I}, [\text{A}] \text{ of I}}{\text{Old key}}, \frac{[\text{A}] \text{ of V, VII}^07, \text{ I}}{\text{New key}}$.

In Fig. 18 it will be seen that the [A] chord of C *without the root* is an enharmonic form of the desired Diminished Seventh chord: thus we find it often occurs that the [A] chord *in the form of a Diminished Seventh* gives the best connection. Indeed, in the present instance, the transition from one key to the other is so direct that it is almost startling, in spite of the close connection.

If we use the other [A] chord, as in Fig. 19, the effect is more gradual.

Both [A] chords as in Fig. 20 give a very smooth Modulation. Even though the fourth chord consists of the same tones as the second (see Fig. 20) it has a different sound when following its [A] chord, which seems to prepare the way and make the general effect smoother.

§ 24. In every case the addition of the Closing Formula to confirm the Modulation (as in Fig. 20 a), greatly improves the effect.

Fig. 20 a.

The musical score consists of two staves. The top staff is in G major (4/4 time) and the bottom staff is in C major (4/4 time). The first section, labeled 'Old key', contains chords I, [A] of I, [A] of V, and VII⁰⁷. The second section, labeled 'New key', contains chords I, I, V⁷, and I. The third section, labeled 'Closing Formula', contains chords II, I⁶, V⁷, V³, and I. The score is annotated with Roman numerals and labels: 'Old key', 'New key', and 'Closing Formula'.

Exercises.

As in Chap. III, the student should exercise himself systematically in modulating by means of this chord, using every key as a starting point from which to modulate to every other key. Even where there is a connecting note between $\frac{I}{\text{Old key}}$ and $\frac{VII^{07}}{\text{New key}}$, if the effect is not smooth the student should try the [A] chords and find the best method of making the Modulation.

§ 25. The Diminished Seventh chord, being common to four keys, and therefore *characteristic of none*, is very useful in *weakening the feeling of Tonality* in the old key, thus making a Modulation seem less abrupt. For the same reason it may be approached as if it belonged to one key and left as if it belonged to another, being used as the turning point in a direct Modulation as in Fig. 18.

§ 26. The Diminished Seventh chord may be used in connection with Modulation by means of the Closing Formula: instead of proceeding to the chord on the Seventh degree, we will connect with the triad on the Fourth (or the Second) degree of the new key, using its [A] chord in the *Diminished Seventh* form to make the connection. (See Fig. 21.)

Fig. 21.

I [A] of IV, IV, I⁴, V⁷, I
 Old key New key

This process is exactly like that of proceeding to the new Tonic through its Diminished Seventh chord, for the Diminished Seventh chord on the Seventh degree is nothing more or less than the [A] chord of the Tonic in its Diminished Seventh form. (See § 5.)

§ 27. In Modulations by means of the Dominant Seventh or the Diminished Seventh chord, the similarity of form between these harmonies and the [A] chord of the new Tonic must have been remarked. These Modulations might even be considered as a rather more concise statement of the formula in § 8, particularly as it is *always found that if any [A] chord is necessary in Modulations through the Dominant Seventh or Diminished Seventh chord, that of* $\frac{I}{\text{Old key}}$ *is sufficient to make the connection.* Thus it is apparent that in connecting the Tonic triad of the old key with any other triad of the new key by the use of [A] chords, we use *precisely the same method* as when we proceed to the new Tonic by means of the Dominant 7th or Diminished 7th: there is no new principle involved, but a *broader application* of the old principle.

A fuller exposition of the Diminished Seventh chord might be given, showing how it may easily be changed into various Dominant Seventh chords by raising or lowering one or more of its tones a half step; and how it has a close relation with every key, Major or Minor (see also §§ 44 and 56). But the pupil, having learned how to find *that Diminished 7th chord (or [A] chord) which shall resolve to ANY DESIRED MAJOR OR MINOR TRIAD*, would find further explanation, though valuable for general knowledge, unnecessary and confusing in pursuing the subject of Modulation.

CHAPTER V.

Modulation by Means of the Augmented Sixth Chords.

§ 28. These harmonies appear in three forms, viz., Augmented Six Three, Augmented Six Four Three, and Augmented Six Five Three chords.

Fig. 22.

3 4 5

They are chromatically altered chords, the Augmented $\frac{6}{3}$ sounding like a Dominant Seventh chord.

Many different theories have been advanced to explain these chords which have long vexed musicians. Although differing in their views regarding their *origin*, the theorists are united concerning the *resolution*: the natural resolution is to the triad a 4th higher (or a 5th lower) than the root of the Augmented 6th, and upon this basis the present chapter will be developed.

Until very recently, in fact so lately that most of the standard works do not touch upon the fact, it was thought that in every key there is but one Augmented Sixth chord,*) that leading to the Dominant. In

the key of C it would be As this is sufficient to show the principle of Modulation by means of the Augmented Sixth chords, it will be used for the purpose, though in the note at the end of the chapter further possibilities will be shown.

We shall arrive at the simplest, most systematic and most practical view of the whole subject by analyzing the three similar chords, the augmented $\frac{6}{3}$, the Augmented $\frac{6}{4}$, and the Augmented $\frac{6}{5}$ together, showing how they have the *same root* and the *same natural resolution*.

The Augmented Six Three Chord.

§ 29. Let us take a Dominant Seventh chord, for example $D F\# A C$, place it in its second inversion with the root omitted, ,

*) It is now conceded that there is also an Augmented Sixth chord on the Minor Second of the scale, having its root on the Dominant and resolving to the Tonic: in the key of C it would be .

and chromatically lower the Fifth from the original root, giving the chord .

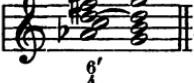
The root being *D*, and the original chord an ordinary Dominant Seventh, the natural resolution is to the triad on *G* .

Notice that the leading note of the original chord progresses upward and the Minor Seventh downward as in the ordinary progression of a Dominant Seventh chord, while the accidentally lowered Fifth follows the natural tendency downward.

The student should here form Augmented Six Three chords from other Dominant 7ths in order to practically comprehend the process.

The Augmented Six Four Three Chord.

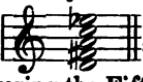
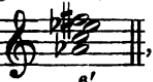
§ 30. If the same Dominant Seventh chord is taken in its second inversion, this time *not* omitting the root, and the Fifth chromatically lowered, we shall have the same Augmented Sixth chord as before

with the addition of the root note *D*, .

This chord is called the Augmented $\frac{6}{4}$. For precisely the same reasons as with the Augmented $\frac{6}{3}$, the natural resolution is to the triad on *G*.

As above, the student should form Augmented Six Four Three chords from other Dominant Sevenths and resolve them.

The Augmented Six Five Three Chord.

§ 31. If we take the same Dominant harmony as before, this time with the Minor Ninth from the root added , place it in its second inversion, omitting the root, and lowering the Fifth accidentally, we shall have the chord , called the Augmented Six Five,

which has the characteristic of sounding like a Dominant Seventh chord.*¹) This chord, being formed from the same harmony as before,

*¹) This chord sounds like the Dominant Seventh of the key of *D* \sharp . The key of *D* \sharp being a semitone higher than the key of *C*, we shall be able to utilize this similarity of sound in the rule for Modulation.

though in a fuller form, has the same natural resolution to the triad on *G* . But here are consecutive Fifths, which may be avoided in various ways. Among them may be mentioned, a) Resolving first to an Augmented $\frac{6}{3}$ or $\frac{6}{3}$, which being precisely the same harmony, does not affect the character of the connection; and b) By delaying the resolution of some of the voices, thus forming a suspension. Both ways are exemplified in Fig. 23.

Fig. 23. 

Before proceeding, the student should form Augmented Six Five Three chords from other Dominant 7^{ths}, resolving them in such a manner as to avoid the consecutive Fifths.

§ 32. It should be noticed that the suspension shown in Fig. 23 forms a $\frac{6}{4}$ chord on the root *C*. If this occurs on an accented beat we have a strong impression of the key of *C*, according to the principle that a $\frac{6}{4}$ chord occurring on the accented part of a measure indicates a close. It was partly this fact which led the older theorists to believe that a key could have but one Augmented Sixth chord. But it should be remembered that it is the chord of the $\frac{6}{4}$ and *not* the chord of the Augmented 6th, which gives the feeling of Tonality.

It is important to observe that all of the above chords, whether $\frac{6'}{3}$, $\frac{6'}{4}$ or $\frac{6'}{5}$, were derived from the root *D*, the *Supertonic* in the key of *C*, and are therefore essentially alike. *It should also be observed that with the exception of the accidentally lowered note, they are like the [A] chord of G.* (This similarity to the [A] chords will be utilized in extending the application of the Augmented Sixth chords. See § 39.)

§ 33. Having gained an insight into the construction of these chords, let us proceed to use them in Modulation. As they resolve to the Dominant (or to the Tonic $\frac{6}{4}$), it will not be difficult to complete the Modulation after we have reached the Augmented 6th of the new key. But how shall we connect with this chord?

Three methods may be suggested by which this can be accomplished.*)

*) Unless the pupil is well advanced in Theory it will be unwise to study all three methods at once as confusion might result: a) will prove sufficient for all practical purposes.

Through the Chord of the Dominant Seventh.

a) The *similarity of sound* between the Augmented $\frac{6}{3}$ and the Dominant 7th has been noticed. If this be further observed, it will be seen that the Augmented $\frac{6}{3}$ in the key of *C* is identical in sound with the Dominant 7th in the key of *D* \natural , the note *F* \sharp being an enharmonic form

Fig. 24.  of *G* \natural (see Fig. 24). As the key of *D* \natural is a semitone higher

than the key of *C*, it is evident that the chord of the Dominant 7th of any key is the same *when changed enharmonically* as the Augmented $\frac{6}{3}$ of the key a semitone lower.

In Chap. II. we learned to connect any chord with the Dominant 7th of any other key; therefore we can proceed to the Dominant 7th of the key which is a *semitone higher than the desired key*. This Dominant 7th, enharmonically changed, will be the desired Augmented $\frac{6}{3}$ chord.

Therefore we may form the following rule: —

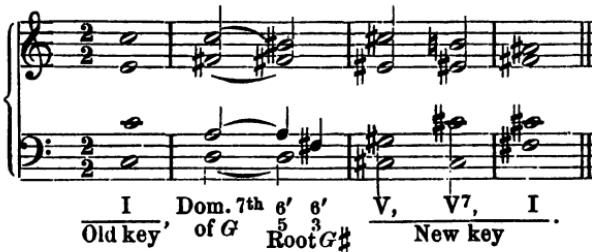
1st. *Connect according to Chap. II with the Dominant 7th of the key a semitone higher than the desired key.*

2nd. *Change this enharmonically*) to an Augmented $\frac{6}{3}$ chord and resolve it to the Dominant or Tonic $\frac{6}{4}$ of the new key.*

3rd. *Complete the cadence, thus establishing the Modulation.*

To illustrate let us modulate from *C* to *F* \sharp . In Fig. 25 the second chord is the Dominant 7th of the key of *G* (which is a semitone higher than the desired key). The third chord consists of the same tones enharmonically changed to an Augmented $\frac{6}{3}$ in the desired key. To avoid consecutive Fifths it is first resolved to an Augmented $\frac{6}{3}$, which progresses to the Dominant of the new key, after which the Cadence is completed.

Fig. 25.



I Dom. 7th 6' 6' V, V7, I.
Old key' of *G* Root *3* *G* \sharp New key

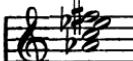
*) As this Augmented $\frac{6}{3}$ chord is derived from the Supertonic of the new key, it must be indicated by the notation.

Fig. 26.

I Dom. 7th 6'
 Old key' of G 5
 I⁴ V⁷ I
 New key

The same plan is followed in Fig. 26 where the Augmented $\frac{6}{3}$ is followed by the Tonic $\frac{6}{4}$ instead of the Dominant. It should not be forgotten however, that the *natural resolution is to the Dominant*.

In Fig. 25 the chord of the Augmented $\frac{6}{3}$, founded on the root $G\sharp$, has $B\sharp$ as its Third, therefore it is *not*, strictly speaking, in the key of $F\sharp$, but is more like the [A] chord of $C\sharp$ with its Fifth ($D\sharp$) accidentally lowered. (Of course the same might be said of the chord

, that it is not in the key of C : this point will be considered in the note at the close of this chapter.)

Before proceeding, the pupil should make himself thoroughly familiar with this process of modulating.

Through the Supertonic of the New key.

b) § 34. A more scientific statement, though not so well adapted for practical use at the keyboard, is as follows: —

As this chord is derived from Supertonic harmony we can connect with $\frac{II}{\text{New key}}$, using [A] chords if necessary. From the 2nd inversion of this chord is formed the Augmented $\frac{6}{3}$ which resolves as above to the Dominant or Tonic $\frac{6}{4}$ of the new key, from which we can complete the Cadence.

It will be best to take the $\frac{II}{\text{New key}}$ in its 2nd inversion*) in order to pass smoothly to the Augmented $\frac{6}{3}$ which is derived from the 2nd inversion of the Supertonic.

*) The treatment of a $\frac{6}{4}$ chord is governed by special rules of Harmony. In general the Bass should be approached from a proximate note rather than by a skip, unless the chord forms part of a Cadence or is approached from another position of the same harmony.



Let us modulate according to this plan from C to $F\sharp$. In Fig. 27 the second chord is the [A] chord (in the form of a Diminished 7th) of $G\sharp$, the Supertonic of the new key. The third chord is the Triad of $G\sharp$ in its second inversion: the fifth chord is the Augmented 5 having $G\sharp$ as its root, leading to the Dominant of the desired key.



In Fig. 28 the Augmented $\frac{6}{5}$ leads to the Tonic $\frac{6}{4}$ instead of to the Dominant.

Through the Chord of the Diminished Seventh.

c) § 35. The chord of $\frac{\text{II}^9}{\text{New key}}$, in the second inversion and without the root, is found to rest upon the *same tones* as the chord of the Diminished 7th on the *Major Sixth* of the new key. Therefore we may express the rule as follows: —

Proceed, if there is a common note, to the Diminished 7th lying on the Major Sixth of the new key. Lower the lowest tone chromatically, thus forming an Augmented $\frac{6}{3}$ a semitone above the new Dominant, which resolves as before. Should an [A] chord be necessary, that of $\frac{1}{\text{Old key}}$ will prove sufficient for all cases.

Fig. 29.



Let us modulate again from *C* to *F \sharp* , using this method. In Fig. 29 the chord at the beginning of the second measure is a Diminished 7th on the Major 6th degree in the key of *F \sharp* . The next chord is the Augmented chord obtained by lowering the lowest tone of this Diminished 7th. It is necessary to write the chord enharmonically to show its derivation from the root *G \sharp* .

For some cases this method is preferable to the others, as the chord of the Diminished 7th, being common to four keys, is characteristic of none; therefore the sense of Tonality is not sufficiently powerful when we strike the Augmented 6th chord to prejudice our judgment in regard to its resolution.

§ 36. The student should notice that in all three methods here described, the underlying idea is that the Augmented 6th chords are derived from the *Supertonic of the new key*, and the notation must indicate that fact.

Exercises.

§ 37. After having learned the use of the Augmented $\frac{6}{3}$ chord in Modulation, it will be found easy to use the other forms of the same harmony, by omitting the 5th if the Augmented $\frac{6}{3}$ is wanted, or taking the 4th instead of the 5th, in the Augmented $\frac{4}{3}$ chord.

The systematic practice recommended in previous chapters should here be most diligently applied.

§ 38. There is also a chord of the Augmented 6th on the Minor Second of the scale, resolving directly to the Tonic, which can be used for modulating. The *root in this case is the Dominant*, and in choosing [A] chords this fact must be considered. This Augmented 6th chord may be approached by either of the three methods described in §§ 33, 34 and 35, but as the objective point is different, a different use of the terms becomes necessary. Fig. 30 illustrates such a Modulation, using the method which is analogous to that in § 34. (For more complete directions see § 53).

Fig. 30.



The second chord is the [A] chord of C^{\sharp} , the Dominant of the desired key. The third chord is that Dominant in its 2nd inversion, followed by the Augmented $\frac{6}{5}$ chord which leads to the new Tonic.

Modulation may be effected by the reverse of the process described in this chapter, viz. by resolving an Augmented $\frac{6}{5}$ as if it were a Dominant 7th in another key. (See Fig. 73.) Chords of the Augmented 6th can also have False Cadences,* offering still further possibilities of Modulation.

Appendix to Chapter V.

A Broader Application of the Augmented Sixth chords. **

§ 39. It has been noticed how the chords of the Augmented 6th used in Chap. V, derived from the Supertonic, are like *Attendant chords of the Dominant*. It seems strange that the theorists should say that the

chord  belongs to the key of *C* when it has so many accidentals. The statement is here offered that it is not, strictly speaking, in the key of *C*, but is merely the [A] chord of the Dominant with its 5th accidentally lowered (which does not alter its resolution). This view is supported by the fact that an [A] chord has a Major 3rd while the chord of the 7th on the Supertonic has a Minor 3rd. The following considerations are offered to prove that the Augmented Sixth chords belong to the *System of Attendant Chords* and as such can be applied not only to the Dominant and Tonic but to other intervals as well.

§ 40. If we look to the Scientific Basis of Music for direction in regard to the use of these chords, we gain very different results from different authorities.

*) In the section from § 39 to § 54 the chord of the Augmented 6th is shown to be a form of Dominant harmony, therefore it can have False Cadences.

**) The following pages (§ 39 to § 54) are designed only for advanced students of Theory and are not essential to the general object of the work. They were written more to show the possibilities of development which lie before these chords than for any other purpose.

Helmholtz informs us that they are a relic of the Dorian Mode.

Dr. Day, after pointing out that no chromatic intervals should be used excepting those which are found among the natural harmonics of the key, gives such a list of chromatic tones, that from it we are able to form but two Augmented Sixth chords, and he asserts that *each chord is derived from two roots*.

Dr. Poole, on the other hand, shows such an extended list of natural harmonics that we may obtain five Augmented Sixth chords without passing the limit. Thus it would seem that we could find authority for most contradictory statements, and the above is sufficient to show that the musical world is still open to conviction in the matter.

The most modern view of these chords, as expressed by Dr. Ouseley in his "Treatise on Harmony", will be seen to be similar to that upon which the chords are displayed in Chap. V, treating them like Dominant chords with the 5th accidentally lowered.

§ 41. If then this is the case, there is no essential reason why these chords can not be used as [A] chords resolving to the different degrees of the scale. (Thus it will be seen that they do not need to be *in* the key any more than other [A] chords.) This will be found only a rational result of the *chromatic condition of the modern harmonic system*, and the *relation of chords to each other irrespective of key*, as mentioned in § 3.

§ 42. But there have been two practical objections advanced to this broader application of the Augmented Sixth chords, which we must consider. They are; a) The feeling of Tonality which has been considered a characteristic of this chord; and b) The bad effect of a *cadencing* resolution to a Minor triad.

§ 43. Let us consider the first. The chord $A\flat$ C $E\flat$ $F\sharp$ was long considered the only Augmented $\frac{6}{5}$ in the key of C , and while it was acknowledged that the theoretically correct resolution is to the Dominant chord, for practical purposes the False Cadence to the Tonic $\frac{6}{4}$ was more frequently taken, the other being rather laid aside.

As a $\frac{6}{4}$ chord, unless carefully approached, gives the feeling of a close and therefore of Tonality, it was natural that the Augmented $\frac{6}{5}$ should gradually come to be used to *lead to the close*. Thus custom became law, and the numerous other False and Modulating Resolutions were ignored.*)

This custom was not in any way contradicted by the *natural* resolution to the Dominant, for, the only Augmented $\frac{6}{5}$ then in use being derived from the Super tonic root, there was a succession of chords

*) As the Augmented Sixth chords are Dominant chords with the 5th accidentally lowered, they have many False Cadences, the number of which is increased rather than diminished by the chromatically altered 5th.

very similar to the Closing Formula, II, V, I, which also gives a strong feeling of Tonality. Thus the chord was connected with a feeling of Tonality which does not so much belong to the Chord itself as to the succession of chords with which it is connected.

§ 44. There is also another consideration which will show why any passing impression of Tonality can be easily connected with this chord. The chief cause of the characteristic of the leading note in a chord of the Dominant 7th to *ascend* is the *interval of a Major 3rd between it and the root of the chord.**) To prove this, play a chromatic sequence of Diminished 7^{ths} up and down the keyboard: it will be seen that there is no sense of Tonality and no predominating tendency on the part of any interval to progress in any direction.**) But if after playing such a sequence we lower any one of the notes a half step, there is at once a most decided tendency to progress in a particular direction, depending upon which tone is lowered. To illustrate, let us imagine the following measures (see Figures 31—34) as occurring at the close of a long chromatic sequence of Diminished 7^{ths}. In the successive examples the Bass, Tenor, Alto, and Soprano are in turn lowered a semitone on the fourth beat to form the root of a Dominant 7th, resolving in each case to the triad a 4th higher than the root of the Dominant 7th.

Enharmonic writing is of course occasionally necessary.

Fig. 31.

$\text{V}^7, \text{ I}$
Key of D

Fig. 32.

$\text{V}^7, \text{ I}$
Key of E

*) The cause of this characteristic may perhaps be more accurately defined by saying it lies in the *combination* of the interval of a Major 3rd *below* and a Diminished 5th *above* the leading note. The point here to be impressed is that the interval of a Diminished 5th alone, or in combination with *Minor 3^{rds}*, is not sufficient to give a strong upward tendency to the leading note.

**) In § 20 it was shown that a chord of the Diminished 7th is composed of equal intervals (Minor 3^{rds}), therefore there is *practically* no difference between the several inversions. In § 17 it was explained that in a chord of the Diminished 7th, the dissonant intervals are the Diminished 5th and the Diminished 7th from the Bass (*not* the root). According to § 20 either of the notes of the chord may be taken as the Bass (which is the leading note); therefore the intervals of a Diminished 5th and a Diminished 7th *from each note considered as the Bass* are present in every chord, either directly or by inversion. Thus it becomes clear that there are *four sets* of dissonant intervals, *each set demanding a different resolution*. As these sets are equally powerful the effect of each is neutralized by the others and the general effect is not strong in any direction, though there is felt to be a necessity of *some* resolution.

Fig. 33.

Fig. 34.

The Diminished 7th chord is composed exclusively of Minor 3^{rds}: thus it becomes plain that as soon as the interval of a Major 3rd is formed, there is a strong impression of Tonality.

§ 45. Let us apply this to the Augmented $\frac{6}{3}$. When we omit the root of a Dominant 7th or Dominant $\frac{9}{7}$ we remove this impression of a leading note, as the remaining notes are at an equal distance from each other. Lowering *another* note accidentally introduces the characteristic interval of a Major 3rd between other notes, and the impression from the *first* root is materially weakened or soon forgotten if the chord is long continued.

For this reason the feeling of Tonality is a little obscure and liable to be disturbed by passing influences; therefore much depends upon the manner in which this chord is approached, as in Modulation a previous key might easily leave behind a disturbing sense of Tonality.

§ 46. If the Augmented $\frac{5}{3}$ is approached through a Diminished 7th chord, the impression of the previous key can be almost or entirely removed, for as was shown in Chap. IV, the Diminished 7th being common to four keys, is characteristic of none.

This is illustrated in Fig. 35, modulating from $E\flat$ Major to C .

Fig. 36.

This Modulation is carried out according to the rule b) of § 34. The third chord is the [A] chord, in its Diminished 7th form, of *D*, the Supertonic in the new key. The fourth chord is the chord derived from *D* (but with a Major 3rd), in its second inversion with the 7th and 9th added, and with the root omitted in preparation for the following Augmented $\frac{6}{5}$. This Augmented chord resolves to the Dominant, after which the Closing Formula, II, V, I, is added.

In Fig. 36 will be seen the same kind of a Modulation (using [A] chords in the Diminished 7th form) but the Augmented 5 leads to the ⁶ ₃ *Fourth degree*, thus forming a Modulation by means of the Closing Formula.

The third chord is the [A] chord of $\frac{\text{IV}}{\text{New key}}$; the next chord is the same with its 5th accidentally lowered thus making an Augmented $\frac{6}{5}$, leading to the triad on the Fourth degree, after which the Cadence is completed.

§ 47. Having now seen Augmented $\frac{5}{3}$ chords which lead to the Dominant, the Tonic and the Sub-dominant, we may safely say that the impression of Tonality in connection with these chords is only *apparently* the case,* and may be avoided by properly approaching them.

The Cadencing Resolution to a Minor Triad.

§ 48. The cadencing resolution of this chord to a Minor Triad being more harsh than to a Major one, is usually forbidden. But why?

Looking back over the history of the development of the Harmonic System, we find that two centuries ago the Minor Triad was not considered sufficiently consonant to be used as the final chord of a composition.

*) To connect the chord $A\flat\ C\ E\flat\ F\sharp$ with the key of C would seem theoretically quite erroneous: if connected with any it would apparently be most nearly related to the key of G , for it is like the Dominant harmony in that key with the 5th accidentally lowered and the root omitted. But having the characteristic interval transposed by this accidental lowering of the 5th, it loses part of its tendency toward G : therefore it has *less Tonal relation than other Dominant chords*, and the only relation it has to the chord on C is the *Natural relation* by having a common note.

A principle of Harmony is that every dissonance must resolve to a consonance. But a scientific analysis of a Minor triad shows the presence of one or more so called Combinational Tones or deep Harmonics, which produce a faint discord, and the presence of a natural Harmonic of the root which is also discordant. In Major both the Combinational Tones and the Upper Harmonics coincide with the intervals of the chord, thus making a more perfect consonance than the Minor. For this reason a Minor triad is *naturally* less well adopted than a Major one to be the resolution of *any* dissonance.

If we consider the *forced* progression of the chromatically lowered 5th,* the *implied* if absent consecutive Fifths, the faint impression of a foreign key caused by the similarity of sound to the Dominant 7th (see § 31) and by transposing the important interval of the Major 3rd (see § 45), and the consequently different progressions, — if all these are taken into view, it is only natural that the ear should desire the most perfect possible consonance as the resolution of this chord, which through *arbitrary* change has been made obscure and contradictory.

§ 49. Being however, Dominant harmony, there is no essential reason why this chord can not resolve to the Minor as well as to the Major *if it can be done with good effect*. The following hints are designed to secure a smooth connection of the chords and thereby a pleasant progression from the Augmented $\frac{5}{3}$ to a Minor triad.

1) If in approaching the Augmented $\frac{6}{3}$ we destroy as far as possible all previous feeling of Tonality, for example by using a Diminished 7th chord, it can resolve to a Minor triad without bad effect.

Fig. 37.

*) The progression of the 5th in Dominant harmony is free, that is, it can move either up or down. But being chromatically lowered in the augmented $\frac{6}{3}$, it is in a measure forced to continue in the same direction for its resolution, forming consecutive Fifths with the Minor 9th from the root if they resolve at the same time and both follow their natural tendency to the note a half step lower.

Fig. 38.

I, [A] of I, Old key, [A] of II, II, V⁷, New key, I.

For example, in Fig. 37 the third chord is the [A] chord of $\frac{\text{II}}{\text{New key}}$ in its Diminished 7th form. The fourth chord is the same in its Augmented $\frac{6}{3}$ form. By comparing Fig. 37 with Fig. 38 it will be seen that the Augmented $\frac{6}{3}$ improves rather than mars the smoothness of effect.

2) By restoring the accidentally lowered 5th before resolving, or in other words resolving it to an ordinary Dominant or Attendant chord, and allowing the 5th to proceed upward to the Minor 3rd of the succeeding chord.

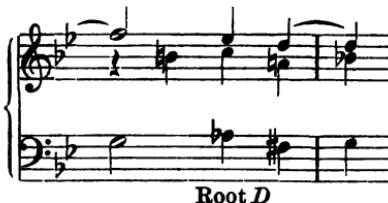
Fig. 39.

I, Old key, [G'], [A], New key, II, V⁷, I.

In this case the chord should be approached according to a) § 33, to prevent the altered 5th from being first heard in its natural position. It would be a meaningless progression for a note to descend a half step and at once return. Therefore in the above example we look for the Dominant 7th situated a semitone higher than the desired triad ($\frac{\text{II}}{\text{New key}}$). As $\frac{\text{II}}{\text{New key}}$ is $G\sharp$, the necessary Dominant 7th must lie on A . This Dominant 7th, (in Fig. 39 enclosed in parenthesis) enharmonically written to show its derivation from $D\sharp$ (because $D\sharp$ is the root of the [A] chord of $G\sharp$) will be the Augmented $\frac{6}{3}$ chord resolving to $G\sharp$.

In Op. 22, Beethoven has used a device similar to the above, as shown in Fig. 40.

Fig. 40.



Root D

Here the Augmented $\frac{6}{5}$ harmony is *divided* between the two chords on the third and fourth beats of the measure, that on the third beat lacking only $F\sharp$ to be a complete Augmented $\frac{6}{3}$. The fourth beat shows us ordinary Dominant harmony (the 7th, C , was heard in the previous chord) leading to the triad of G Minor. Notice that $A\flat$ of the third beat is restored (made natural) on the fourth beat, and progresses to the Minor 3rd of the triad of G in the same manner as in Fig. 39.

§ 50. It should be noticed that in Figs. 35, 36 and 37, the Augmented $\frac{6}{5}$ was derived from the [A] chord of the interval to which it (the Augmented $\frac{6}{5}$) should resolve, thus showing the Augmented $\frac{6}{3}$ to be only an [A] chord with altered 5th.

§ 51. Should further proof be desired, it can be found in the fact that a descending chromatic sequence can be formed from a series of Augmented Six Five chords in the same manner as from Dominant 7^{ths} or Diminished 7^{ths}, as shown in Figs. 41 and 42.

Fig. 41.

D minor.

Music score for a chromatic sequence of augmented sixes. The score consists of four staves, each with a treble clef and a key signature of one flat. The sequence is as follows:

- Staff 1: Tonic, Dom., Tonic, Dom., Tonic, Dom., Tonic, etc.
- Staff 2: Tonic, Dom., Tonic, Dom., Tonic, Dom., Tonic, etc.
- Staff 3: Tonic, Dom., Tonic, Dom., Tonic, Dom., Tonic, etc.
- Staff 4: Tonic, Dom., Tonic, Dom., Tonic, Dom., Tonic, etc.

Below the first staff, there are two markings: "5 6'" and "3 6'".

Fig. 42.

Music score for a chromatic sequence of dominant seventh chords. The score consists of four staves, each with a treble clef and a key signature of one flat. The sequence is as follows:

- Staff 1: Dominant 7th, Tonic Omitted, Dominant, Dominant, Dominant.
- Staff 2: Dominant 7th, Tonic Omitted, Dominant, Dominant, Dominant.
- Staff 3: Dominant 7th, Tonic Omitted, Dominant, Dominant, Dominant.
- Staff 4: Dominant 7th, Tonic Omitted, Dominant, Dominant, Dominant.

Below the first staff, there are two markings: "Aug. 6" and "5".

The 1st, 2nd, and 3rd staves of Fig. 41 show a series of Dominant and Tonic chords, each Tonic chord being used as the basis for constructing the following Dominant harmony. (The process is fully described in Chap. VI.) The 4th staff shows the root of each chord in the upper staves, and need not be played unless we desire to hear a series similar to the others, but with the Dominant harmonies appearing in the form of Minor 9^{ths}, when it may be played in connection with the 2nd staff. To avoid consecutive 5^{ths} in resolving the Augmented $\begin{smallmatrix} 6 \\ 5 \end{smallmatrix}$, the quarter notes on the 3rd staff may be used, forming an Augmented $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$ after the Augmented $\begin{smallmatrix} 6 \\ 5 \end{smallmatrix}$. The chords of the Augmented $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$ formed from the roots *C*, *B*flat, and *A*flat, are inverted, the Augmented 6th appearing in the form of a Diminished 3rd between the two inner voices.

Let us compare the Dominant harmonies, in the different forms of Dominant 7th, Diminished 7th, and Augmented $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$, taking for example the latter part of the third (full) measure of Fig. 41, having *B*flat for the root. The 1st staff shows the chord in its Dominant form to be *F A*flat *B*flat *D*; the 2nd staff gives (by inverting for comparison), *F A*flat *C*flat *D*; the 3rd staff gives *F*flat *A*flat *C*flat *D*. From this we see there is a closer resemblance between the Diminished 7th and the Augmented $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$ forms than between Diminished 7th and Dominant forms: therefore if we say that the Diminished 7th is a form of Dominant harmony, surely the Augmented $\begin{smallmatrix} 6 \\ 3 \end{smallmatrix}$, having the same root as the Diminished 7th, the same resolution and the same intervals excepting one which is accidentally — *not fundamentally* — changed, should be admitted as a form of the same harmony.

Fig. 42 shows the same series of chords as Fig. 41, but with the

Tonic harmonies omitted, forming a sequence of Dominant 7^{ths}, Diminished 7^{ths} and Augmented $\frac{6}{5}$ chords, respectively. As this can be done with as good effect in the Augmented $\frac{6}{5}$ as in the other forms, we may conclude that the Augmented $\frac{6}{5}$ has the same properties as the other forms of Dominant harmony.

It has been shown that Attendant chords are the same as Dominant harmony, excepting that they are *not necessarily in the key*; therefore it must be clear that the *Augmented Six Five chords belong to the System of Attendant Chords.*

§ 52. By comparing Figs. 7 and 27, it will be seen that the [A] chord of $\frac{V}{\text{New key}}$ in Fig. 7 and the Augmented $\frac{6}{5}$ leading to $\frac{V}{\text{New key}}$ in Fig. 27 are *similar chords*, having the *same root* and the *same resolution*, whether in the form of Dominant 7th or Augmented $\frac{6}{5}$: this affords additional evidence of what is already well established.*)

§ 53. Though hardly necessary after the description already given, the following rules may be useful in finding the Augmented $\frac{6}{5}$ resolving to the triad upon *any desired interval of the scale*: (See § 6.)

- a) The Augmented $\frac{6}{5}$ may be derived from the Dominant 7th lying a semitone higher than the root of the desired chord.**)
- b) It may be formed by taking the [A] chord of the desired interval in its 2nd inversion and then accidentally lowering the 5th (from the root of the original [A] chord).
- c) It may be derived from the Diminished 7th lying a *whole tone* above the desired interval.

These three rules are *practically the same* as the corresponding rules in §§ 33, 34 and 35.

§ 54. After a careful consideration of the above, it would seem beyond a doubt that the Augmented 6th chords can have a much wider application than has been accorded them in the past. The history of the development of the Harmonic System shows a continual addition of new harmonic material and innovations in the use of chords. It is also noticeable that as certain chords became better understood the restrictions regarding their use were gradually removed, allowing them a larger range. Therefore it is but reasonable to expect that the Augmented Sixth chords (concerning which authorities still disagree) as they become better known will undergo a similar process of emancipation. Being however extremely sensitive, they need careful treatment, and this we have learned from the preceding pages to apply, both in approaching and resolving them.

*) This classification (considering the chords of the Diminished 7th and Augmented 6th to be but forms of Dominant harmony) will be found to greatly simplify the study of Harmony.

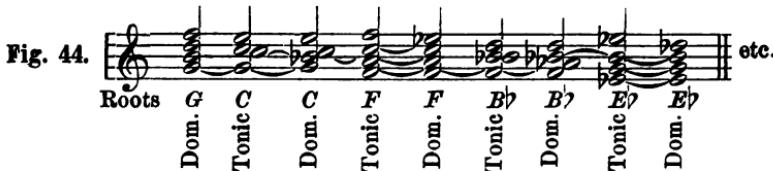
**) By *desired chord* is meant the chord to which the Aug. 6th should resolve.

CHAPTER VI.

Chromatic Sequence of Dominant Seventh Chords. Chromatic Sequence of Diminished Seventh Chords.



§ 55. While not directly bearing upon Modulation, to understand these simple progressions will give the student a more thorough grasp of the entire subject, as it shows the inter-relation of the whole harmonic system.

Sequence of Dominant Sevenths.

In Fig. 44 a succession of Dominant 7th and Tonic chords is given, each Dominant 7th being formed by *adding* a Minor Seventh to the preceding Tonic triad. The Dominant Seventh chords resolve regularly to the triad a 4th higher or a 5th lower.

Thus the first chord resolves regularly to the triad on C. To this triad the Minor Seventh from the root C is added, making a Dominant 7th, whose natural resolution is to the triad on F.

Adding a Minor Seventh to *this* triad brings us to the triad on B \flat . Repeating the process, we come to the triad on E \flat , then to A \flat , D \flat , G \flat etc.

Now as the chord with the Seventh added is merely an *enlargement* of the triad, we are allowed to progress directly from one Seventh chord to the next, considering that the Tonic triad is *implied* in its enlarged form. (See Fig. 45.)



Note that in this case the leading note is apparently allowed to progress downward, but in Fig. 44 it will be seen that it *first* progresses upward.

§ 56. *The sequence of Diminished Sevenths* is based upon that of Dominant Sevenths. As the chord is derived from Dominant harmony by adding the Minor 9th to the Dominant Seventh chord and omitting the root (see § 17), we must drop the root and add not only the 7th but the 9th also in forming the successive Dominant harmonies in this sequence.

Fig. 46.

Roots G C C F F B⁷ B⁷ E⁷ E⁷ A⁷
Dom. Tonic Dom. Tonic Dom. Tonic Dom. Tonic Dom. Tonic etc.

Comparing Fig. 46 with Fig. 44, the harmonies will be found similar, the Dominant harmonies in Fig. 44 appearing in the form of Diminished Seventh chords in Fig. 46.

Omitting the Tonic chords as in the sequence of Dominant Sevenths, and for the same reason, we have by placing the chords in the *proper inversions*, a chromatic sequence of Diminished Seventh chords as shown in Fig. 47.

Fig. 47.

Roots G C F B⁷ E⁷
Dom. Dom. Dom. Dom. Dom. etc.

Thus it will be seen that this sequence of Diminished Seventh chords is founded upon a constantly modulating progression of Dominant to Tonic, each Tonic being used as the *basis of the next succeeding Dominant harmony*.

Exercise.

The pupil should write out the sequence of Diminished Seventh chords, developing the whole process as in Fig. 46, but starting from the Diminished Seventh chord on A[#].

CHAPTER VII.

The Ordinary Methods of Modulation.*)

§ 57. In all the Modulations so far given, it has been shown possible to pass from *any* key to *any* other, but in the following it is not the case. Being however, in common use and of most excellent effect where circumstances favor their introduction, this little work would not be complete without noticing at least those which occur most frequently.

§ 58. a) *Compound Modulation, consisting of transition through several keys related**) to one another, by means of Dominant chords.* (See Fig. 48.)

Fig. 48. {

From *D* through *E*, *F* ♯

to *A* ♭

§ 59. b) *When two keys have a triad in common.* For example the triad *C E G* is found on the First degree in the key of *C*, on the Fourth degree in the key of *G*, and on the Fifth degree in the key of *F*. Therefore it is easy to pass from the key of *C* to the key of *G*, or to the key of *F*. (See Fig. 49).

*) §§ 58, 60 and 62 are derived from Mr. H. C. Bannister's admirable "Text Book of Music". London, 1887.

**) For definition of "Related keys" see § 82.

Fig. 49.

C to G.

C to F.

C I V V7 I C I F V V7 I

Again, the triad *E G B* is found on the Third degree of *C* Major, on the Second degree of *D* Major, on the Fourth degree of *B* Minor, on the First degree in *E* Minor and on the Sixth degree in *G* Minor. In the same manner we can pass from *C* Major to any of these keys, or from any one of them to any other. (See Fig. 50).

Fig. 50.

C to D.

C to B Minor.

C I, D II, V, V7, I. C I, B Min. IV, V, V7, I.

C to E Minor.

C I, E Min. IV, V, V7, I.

And so we might proceed, finding that the triads of the various degrees of the scale offer many opportunities for connecting with triads of foreign keys.

§ 60. c) *By taking one note of a triad of the original key — not necessarily the Tonic triad — and treating it as if it were an interval of the Tonic triad or Dominant Seventh chord of the new key.* (See Fig. 51). This is particularly practicable when we modulate to keys whose leading note forms part of the Tonic triad of the old key, as in Fig. 52.

Fig. 51.

$\text{I, V}^7, \text{ I}$
 C Major, A Minor

Fig. 52.

$\text{I, V}^7, \text{ I}$
 $\text{C Major, D}\flat\text{ Major}$

§ 61. d) *By Means of a False Cadence.*

When a Dominant 7th instead of resolving regularly to its Tonic, resolves to some other triad in the key, it is called a False Cadence: when it resolves to a triad in a foreign key it is called a Modulatory False Cadence, and only needs the addition of the Closing Formula to establish the Modulation, as in Figs. 53 and 53^a.

Fig. 53.

$\text{I, V}^7, \text{ I, IV, I}_4^6, \text{ V}^7, \text{ I}$
 C Major, E Major

Fig. 53 a.

$\text{I, V}^7, \text{ I, VI, II, V}^7, \text{ I}$
 $\text{C Major, A}\flat\text{ Major}$

In Fig. 53^a there is no connecting note between $\frac{\text{V}}{\text{Old key}}$ (which is the [A] of C) and $\frac{\text{I}}{\text{New key}}$, but if the [A] chord of C is taken in the form of a Diminished 7th the connecting note A \flat is found, therefore we may say that there is a *Structural* connection which is not apparent in the notes. (See §§ 88 and 89).

§ 62. e) *By changing one note of a triad enharmonically*, whereby the Tonic is at once changed without any Dominant chord. The

Dominant chord should be introduced later to establish the Modulation. (See Fig. 54).

Fig. 54.

F

I, V⁷, I I, II, I₄⁶, V⁷, I

E Major A⁷ Major

Exercises.

Examples of each of the foregoing Modulations should be formed by the student, as only in this manner can he gain a *practical* knowledge of the subject.

CHAPTER VIII.

The General Principles of Modulation as Deduced from Practical Analysis: Artistic Modulation.

§ 63. The following pages are devoted to the analysis of selections from different standard theorists and composers, to show that however abstruse the passages may be, there are underlying principles which govern the Modulation.

It need not be stated that chords *other* than the Attendant chords can be used as connecting links, as was shown in § 59; therefore in the analysis of music we should not expect to find the Attendant chords exclusively used for that purpose.

§ 64. Let us begin with two simple examples from "Music" by Mr. H. C. Bannister. The first, passing from *F*[#] Minor to *A* Major,

Fig. 55.

I, IV
Old key
II, VII⁰⁷, I, IV, I₄⁶, V⁷, I
Closing Formula Closing Formula

New key

(Fig. 55) is a Modulation by means of the Closing Formula. $\frac{\text{VII}^7}{\text{New key}}$ being merely a form of Dominant harmony. The 2nd chord forms the connecting link, being at the same time the triad on $\frac{\text{IV}}{\text{Old key}}$ and $\frac{\text{II}}{\text{New key}}$. When $\frac{\text{I}}{\text{New key}}$ first appears it is in its first inversion: as this is not a Full Close, the Closing Formula is repeated, this time as I, IV, I⁴, V⁷, I.

§ 65. The second (Fig. 56) is a Modulation through the Diminished 7th of the New key, with the Closing Formula added for the same reason as before. Notice that the connection between $\frac{I}{\text{Old key}}$ and

VIII⁷
New key could have been made by means of the common note *D*,

Fig. 56.

omitting the second measure entirely (in this case play the note *F* in parenthesis instead of the note *D* as the Bass of $\frac{\text{VII}^0}{\text{New key}}$); but the succession of chords between $\frac{\text{I}}{\text{Old key}}$ and $\frac{\text{VII}^0}{\text{New key}}$ is *useful in removing the feeling of Tonality* in the old key, thus *preparing the Modulation*.

§ 66. Upon the first glance the following example, from Dr. S. Jadasohn's "Harmony", would seem *not* to follow any particular plan: but examination shows it to be most carefully constructed according to the Modulation by means of the Closing Formula. (See Fig. 57).

Fig. 57.

I, [A] of II, II, V⁷, I
Old key, New key

By Enharmonic writing $B\flat$ becomes $A\sharp$, therefore it is *practically* the second degree in the key of $G\sharp$ minor, but the *notation is first changed on the Dominant 7th*.

§ 67. Richter in his "Manual of Harmony" gives an example which illustrates several points in artistic Modulation. (See Fig. 58.)

Fig. 58.

I, [A] of V, V, III, [A] of II, V⁷, I, II⁷, V, I
Old key, New key

The second chord is a Diminished 7th resolving to $B\flat$, the Dominant of the new key. Although the foreign harmony is suddenly introduced the effect is good, as the chord of the Diminished 7th has the quality of removing, at least in part, any previous feeling of Tonality. (See § 25).

If the new key should be too quickly established after this sudden introduction, the Modulation would be rather abrupt for artistic use, therefore several chords are introduced between the Dominant and Tonic. When the Tonic first appears it is as a passing chord, being on an unaccented part of the measure, thus necessitating the use of the Closing Formula.

§ 68. The following examples are taken from Beethoven's Pianoforte Sonatas, which being accessible to all are perhaps the best possible illustrations of the various points to be presented for consideration. The following selection, from Op. 2. No. 1, Last Movement, illustrates the use of [A] chords.



At the beginning of the first bar (Fig. 59) we are clearly in the key of *F*Minor. With the fourth beat of this measure comes the [A] chord of the new Dominant: in the 2nd and 4th measures this [A] chord is repeated for the sake of emphasis. Then follows purely Dominant harmony, leading in the last measure to the key of *C* Minor.

Let it be noticed how little apparent connection there is between the chord of *F* Minor and the [A] chord following: but the last note in the measure, *C*, properly belongs to the [A] chord as an essential interval, and hence may be looked upon as the connecting link.

§ 69. Another example of Attendant chords is found in the Sonata Pathétique, Op. 13, First Movement.

In the Allegro the principal theme is repeated in different keys, and to connect these repetitions [A] chords are suddenly introduced, as shown in measures 2 and 6 of Fig. 60.

Fig. 60.

C minor V [A] of A♭

[A] of B♭

It must be acknowledged that these [A] chords have no especial tonal relation with the chords preceding them; neither are they essential parts of the motive. Therefore we look upon them merely as connecting links or simple [A] chords, having no other office than to connect the repetitions of the theme.

§ 70. The next illustration taken from Op. 14, No. I, shows a careful introduction of the [A] chord, being in sharp contrast with the

abrupt entrance in the last example. Here the Modulation is from *E* Major to *B* Major.

Fig. 61.

[A] of $\frac{V}{\text{New key}}$ [A] of

V [A] of V [A] V [A]

V [A] I

This selection (Fig. 61) constitutes that part of the sonata in which the Modulation from the first to the second theme takes place. In such a Modulation it is customary to dwell a long time on the Dominant of the new key to strengthen the effect of the new Tonality: therefore the new Dominant enters here in the third measure. Preceding the Dominant is its [A] chord. It should be noticed how in the first measure and first half of the second the harmonies are gradually led up to the [A] chord, ascending by half steps.

As in Fig. 59 the Dominant alternates with its [A] chord for several measures, leading finally to the second theme in *B* Major. The Organ-

point on the Dominant is also effective in establishing the impression of the new key.

§ 71. In the Allegretto of the same Sonata is an example of the use of the Closing Formula.

Fig. 62.

p decresc. pp

ff

$\{ C \quad I \quad VI$
 $E \text{Min. VI, IV, } I_4^6, V, \quad I$

In this case [A] chords are not used, the Modulation being constructed on the basis of having a *chord common to both keys*. It is fully described by the marking under the staff. (See Fig. 62.)

§ 72. The following, from Op. 10. No. 1, forms an example of Modulation through the chord of the Diminished 7th. It is taken from the "Development" beginning with the 106th measure, after the double bar. In the development of a sonata where different keys sometimes follow each other in rapid succession, the Modulations are not so formal as in the passage connecting the first and second themes, as it is not necessary to establish any key very firmly.

Fig. 63.

f

p

$\{ I \quad [A]$

f 5 6 *p* 7 8

of C - - - - [A]

f 9 10 11 12 13

of *F* - - - - - I
New key.

In the first three measures (Fig. 63) the Tonic, *C* Major, is heard exclusively: at the close of the 4th measure the [A] chord of *C* (in its Diminished 7th form) enters, continuing during the 5th, 6th and 7th measures. At the close of the 8th measure the chord of the Diminished 7th on the Seventh degree of the key of *F* (or the [A] chord of *F* in the form of a Diminished 7th) appears, continuing during the 9th, 10th, 11th, and 12th measures, followed by the new Tonic without further introduction.

This example furnishes a perfect illustration of the formula $\frac{\text{I}}{\text{Old key}}$,
[A], $\frac{\text{I}}{\text{New key}}$, mentioned in § 8.

§ 73. Modulation by means of the chord of the Augmented $\frac{6}{3}$ is illustrated in the Allegretto of Op. 14, No. 1.

Fig. 64.

p 3 V, - - - - - I
New key

The prevailing key *at the moment* is *C* Major. In the 2nd measure of Fig. 64 the Augmented $\frac{6}{3}$ enters, having two notes in common with the preceding chord. According to the rule that the "sharpest" note is the leading note, the *root* of the Augmented $\frac{6}{3}$ is *F* \sharp , and the resolution to the triad on *B* is the *natural* one. As *B* is the Dominant of the key of *E* Minor, which immediately follows, the whole Modulation is from *C* Major to *E* Minor. For this reason the Augmented $\frac{6}{3}$ may be looked upon as the [A] chord of the new Dominant in its Augmented $\frac{6}{3}$ form.

§ 74. To avoid the consecutive Fifths in the resolution of the Augmented $\frac{6}{5}$, Beethoven uses many devices so ingeniously as to really add to the melodic beauty of the passage.

Fig. 65.



Fig. 65 is *part* of a Compound Modulation, (the whole of which is given in Fig. 67) passing from $D\flat$ Major to $B\flat$ Major. According to the above mentioned rule, the root of the Augmented $\frac{6}{5}$, which appears by suspension on the 2nd beat of the 2nd measure, is F ; therefore the resolution to $B\flat$ is the natural progression. It will be observed that the $\frac{6}{5}$ resolves to $\frac{6}{3}$ on the third beat of the measure, thus avoiding the consecutive Fifths and at the same time strictly following the figure characteristic of the passage.

Artistic Modulation.

§ 75. Examples of Compound Modulation are to be found in many of Beethoven's Sonatas after the first theme has been announced. Two of these will now be considered, as it is desired to bring the *artistic* features into prominence after having so carefully studied the *technical* side of the subject.

Let us look at the passage connecting the first and second themes in Op. 7, First Movement. The Modulation begins with the 2nd measure in Fig. 66, leading through $A\flat$ Major, $B\flat$ Minor, and F Major to $B\flat$ Major in which the second theme is given.

Fig. 66.



5 6 7 8 9

pp

[A] of $B\flat$ $B\flat$

10 11 12 13 14

sf *sf* *sp*

[A] of F F

15 16 17 18

V^7

New key

19 20 21 22

I V 22

[A] of VI

23 24 25

etc.

[A] of IV [A] of II I^6 V^7 I

New key

Let us notice the following points suggested by a consideration of the example (Fig. 66).

- a) *It is desirable to fully remove the original Tonality before proceeding to give the second theme*; therefore the hearer is led through several keys before reaching the new key, thus completely losing the feeling of $E\flat$ and making $B\flat$ sound quite fresh.
- b) *In Compound Modulation each key should be related to the one before it*, making the general effect of the transition smooth and artistic. (See list of Attendant or Relative keys, § 82.)
- c) *Variety in the Means of Modulation*. At bar 2 the chord of the Dominant 7th is used; at bar 6 the Diminished 7th; at bar 10 the Augmented 6th. Notice that all these are but forms of the Attendant chord: this explains their introduction without a closer tonal relation with the preceding chords. (See § 3.)
- d) *Modulation should not stop the flow of ideas*. Melodic figures and musical thoughts can as well be expressed during a Modulation as at any other time: indeed they are necessary to conceal the change of Tonality. Notice how the figure in measures 3, 4 and 5 is repeated in measures 7, 8 and 9; and how the figure in two part counterpoint is used three times in measures 22, 23 and 24.
- e) *Establishment of the New key*. This is accomplished in various ways: 1) *The succession of Dominant and Tonic*. This is sufficient if the next succeeding chords belong to the same key.
- 2) *The Closing Formula*. As the nature of the Closing Formula suggests the close of a phrase or section, it is not particularly well adapted to be used at the beginning of a Melody. If it is used where it is not desired to close a section or phrase, it will be necessary to avoid allowing the Tonic to be heard on the accented beat or at least to avoid having both Soprano and Bass sound the fundamental note of the chord.
- 3) *By pausing upon the Dominant harmony*. By this means a sense of expectation is aroused which materially assists the establishment of the new key as soon as the Tonic chord is heard. This makes a formal introduction of the new key and gives a very decided feeling of Tonality without even hinting at a close, therefore it is well adapted to establish the key in which a new subject is about to be introduced. For this reason we find several measures devoted either to the key or the *Chord* of the Dominant before really going into $B\flat$ to announce the second theme.

Notice that measures 13 and 15 belong to the key of *F* (having *E*♭ they could not be in the key of *B*♭). But in the 18th measure *E*♭ is introduced showing that we now have the Dominant 7th of *B*♭. In the 13th and 15th measures the harmonies may be considered the [A] chords of *F* on the Organ-point *F*.

The chords at the beginning of measures 22, 23 and 24, though foreign to the key of *B*♭ can not be called Modulations, as the chords of *G* Minor, *E*♯ Major and *C* Minor appear on the *unaccented* beats of their respective measures. The proper classification is to call them the [A] chords of the Sixth, Fourth, and Third degrees in the key of *B*♭. Thus we see that the ruling harmony from the 12th to the 25th measure is that of the Dominant, preparing and emphasizing the new key.

§ 76. In the following example, taken from the beginning of Op. 10, No. 1, the same general features are apparent. In modulating from *C* Minor to *E*♯ Major, Beethoven adopts a definite plan, passing through keys a Major or Minor Third apart till he reaches the Dominant of the new key: that is, in the succession of keys through which the Modulation passes, *A*♭, *F*, *D*♭, *B*♭, each key is a Major or Minor Third lower than the preceding. The alternation of Major and Minor Thirds in this plan is necessary that each key may be "related" to the preceding key. (See § 82.)

Fig. 67.

1 2 3 4 5

f.p.

[A] of *A*♭ *A*♭ *V*7 *I*

6 7 8 9 10 11

f.p.

[A] of *F* *V*7 *I* f.p. [A] of *D*♭

Upon the simple but symmetrical harmonic skeleton shown in Fig. 68 the above beautiful Modulation is constructed.

Fig. 68.

Old key

New key

Note the symmetry in building up in the same manner the [A] chords in measures 2, 6, and 10 (Fig. 67), how faithfully the beautiful figure is carried out each time, and how Beethoven even makes the melodic

figure help him out of the danger of consecutive Fifths in introducing the chord of the Augmented $\frac{6}{5}$ in measure 14.

Exercises.

§ 77. The student will now be able to analyze examples of Modulation for himself, choosing at first the simpler sonatas of Mozart and Haydn, and afterward taking more difficult ones from Beethoven.

He is also advised to compose examples of Compound Modulation, first adopting a plan, deciding through which keys he will pass and which method of Modulation is to be used in each case. Then a skeleton of the harmonic structure should be made, similar to the one in Fig. 68. Afterward it may be elaborated and ornamented, using a melodic figure several times in succession and trying to carry it out faithfully in the different keys. In this way it is possible to attain a thorough mastery not only over the *Technic* but also over the *Art* of Modulation.

§ 78. To close the chapter, the principles which have been illustrated will be shown arranged in order for practical use in composition.

The Principles of Modulation,

Showing the General Outlines of a Gradual Modulation.

Steps of the Process.

- a) To Destroy the Feeling of Tonality in the Old Key. Introduce chords which are not characteristic of any key (such as Diminished 7^{ths}), or those leading to keys which are related to the desired key. (This step is usually combined with the next.)
- b) To Pass through one or more Keys which form a connecting Chain between the Old and New Keys. The successive keys, which should usually be related to each other, may be connected by any desired means of Modulation, not necessarily using the same method twice in one passage. In the succession of related keys it is not well to mix sharp keys and flat keys too promiscuously. The last key in this chain is usually but *not* necessarily the Dominant of the New key.
- c) To Enter the New Key.* The chords on the 1st, 5th, 2nd, 4th and 3rd degrees of the scale will be found well adapted as points of entrance.
- d) To Establish the New Key. 1) Form a Perfect Cadence in the key: or 2) Dwell upon the Dominant harmony.

*) This is not different from b) except that in the former it is customary to pass more directly to the Tonic of the various keys, while here if desired the Tonic harmony may be preceded by a long succession of chords.

§ 79. In a more direct Modulation there are fewer intermediate keys or none at all; and it often occurs that a *single chord represents several steps of the process*.

§ 80. The use of Suspensions is of great assistance in Modulation, binding the harmonies most closely together and thus securing a smooth progression from one chord to another. (See Figs. 48 and 67).

It is well to *avoid the exclusive use of chords in the fundamental position*. The alternation of the different positions will be found more conducive to a smooth effect.

§ 81. Another important consideration is the *Arrangement of Accents*, as was shown in Chap. III.

§ 82. The Modulations most frequently found in the works of the standard composers are those to the Relative keys. The Relative or Attendant keys are, to a Major key, the Dominant and Sub-dominant Major, their Relative Minors, and the Relative Minor of the key itself.

To a Minor key, the Relative keys are, the Dominant and Sub-dominant Minor, their Relative Majors, and the Relative Major of the key itself.

Modulation from a key to any of its Relative keys is called Natural Modulation; to any other key, Extraneous Modulation.

In practical composition it will be safest to follow the example of the masters and not modulate too frequently into Extraneous keys.

§ 83. It will have been discovered ere this that we can modulate not only from $\frac{\text{I}}{\text{Old key}}$ to all other keys, but in precisely the same manner from the chord upon any other interval. Therefore the student should realize that at any moment he may begin a Modulation whether the Tonic triad is sounding or that of some other degree.

To *practically* comprehend this fact it will be well to try a number of Modulations, substituting in the formulae in § 9 the triad on each degree of the scale in the place of $\frac{\text{I}}{\text{Old key}}$: thus $\frac{\text{II}}{\text{Old key}}$, $\frac{\text{V}^7}{\text{New key}}$; or $\frac{\text{III}}{\text{Old key}}$, $\frac{\text{V}^7, \text{ I}}{\text{New key}}$.

§ 84. In closing it need hardly be said that when expressing musical thoughts, the precise and scientifically direct Modulations, which in illustrating the various means of Modulation, were in this work made as short as possible, should be enlarged and ornamented, till the stiffness shall give place to graceful, natural and easy progressions, and the Technic of Modulation be entirely concealed by the Art of Modulation.

CHAPTER IX.

A More Complete View of the System of Attendant Chords.

§ 85. In Chap. I. it was shown that the relation of an [A] chord to its Primary chord is that of Dominant to Tonic. Thus we have in these two chords (the [A] chord and its Primary chord) the most essential harmonies of a key which, while it is outside of and *subordinate to* the principal key, has a close relationship with it.

Upon examining modern music, it will be found that not only this chord which we call Attendant but also others belonging to this subordinate key are occasionally used.

The following, taken from the Article on Modulation in Grove's Dictionary, illustrates very clearly the case in point and at the same time forms a hearty support for the System of Attendant Chords. Reviewing the development of the use of chords, the writer, Dr. Parry, proceeds as follows:

"In the meanwhile groups of chords belonging to foreign keys were subtly interwoven in the broader expanse of permanent keys, and the principle was recognized that different individual notes of a key can be taken to represent subordinate circles of chords in other keys of which they form important integers, without destroying the sense of the principal tonality".

And again he says:

"The main centre of the principal key is supplemented by subordinate centres: the different notes of the key being used as points of vantage from which a glance can be taken into foreign tonalities, to which they happen also to belong, without losing the sense of the principal key which lies in the background".

Thus these subordinate keys might be called Interpolated keys as they do not really take the place of the principal key, being brought *only momentarily* into the foreground. While not bearing directly upon Modulation, in considering the modern Harmonic System in a general way, it becomes clear that we should take a broader view of the System of Attendant Chords, admitting not only the chord which we have learned to call the Attendant chord, but also others of the subordinate or Interpolated key.

§ 86. A most familiar example of such an Interpolated key is found at the beginning of Mendelssohn's "Wedding March".

Fig. 69.

The musical score consists of three staves of music. The top staff is in C major (G clef) and the bottom two are in E minor (F clef). The score is divided into measures numbered 1 through 9. Measure 1 starts in C major with a trumpet-like sound. Measures 2 and 3 continue in C major. Measure 4 begins a transition to E minor, indicated by a key signature change and a bass note. Measures 5 and 6 show chords in E minor. Measure 6 includes a dynamic instruction 'sf' and a note labeled '(II⁷ V⁷ of E)'. Measures 7, 8, and 9 show more chords in E minor. Measure 9 ends with a 'etc.' instruction. Below the staff, measure numbers are indicated: III, II, I⁶, V⁷, I.

The main key *C* is well established by the Trumpet passage in the first five measures. After this passage the first chord which really belongs to the key of *C* is that on its third degree, *E*Minor, at the beginning of the seventh measure: then we may reasonably expect that the two foreign chords in the sixth measure are dependent upon the triad of *E* Minor or rather upon the *key* of *E* Minor for their existence in this composition. This supposition proves correct, for the chord on the third beat of the sixth measure is the Dominant 7th of the key of *E* Minor, (or simply its [A] chord) and the chord on the first beat is the chord of the 7th on the Second degree in *E* Minor, resolving to the Dominant of the same key.

Thus we may well express the case by saying that instead of an Attendant chord, we have an *Interpolated key*, when there is a succession of foreign chords *without having established a Modulation*. In the above example if the chord of *E* Minor had entered upon the first beat of a measure and if *both* Soprano and Bass had sounded the tone *E*, there would have been a Full Close in the key of *E*Minor, thus forming

a Modulation: but this was avoided by the suspension, by letting the highest part sound the 3rd of the chord instead of the root, and by having the next succeeding chords in another key (in this case the original key of C). This shows the difference between Modulation and Interpolated keys.

Analysis of the Harmonic Structure of a Composition.

§ 87. In analyzing the harmonic structure of a Composition, the chords belonging to the prevailing key may *first be marked*. Afterward the *foreign* chords should be examined with reference to their relation with the *nearest following* (seldom with the preceding) *chord which belongs to the key*. In addition to the various kinds of Modulation mentioned in the foregoing chapters, there are occasional examples of Interpolated keys and of Modulation where the connection is concealed or entirely absent, as described in the following.

§ 88. a) *Resolving a chord as if it were differently expressed.*

This is illustrated in Fig. 70, quoted from the Article on Modulation in Grove's Dictionary, *) (originally from a Quartette in B \flat by Mozart) where the second chord resolves as if it were written A \flat C F \sharp which is an Augmented $\frac{6}{3}$ resolving naturally to the triad on G. The omitted root of the $\frac{6}{3}$ chord, D, is the common note connecting the two chords; thus it is plain that there is a Structural connection which is not indicated by the notes.

Fig. 70.

Key of D \flat . V 7 . Key of C.V., I 4 . etc.

§ 89. b) *Unprepared Entrance of Attendant Chords.*

Being Dominant harmonies the Attendant chords can enter without preparation, i. e. without having any note in common with the preceding chord. This explains the passage at the beginning of Beethoven's Op. 90, where in the 3rd and 7th measures [A] chords of the 3rd and 5th degrees enter without having the least apparent connection with the preceding chords. (See Fig. 71). As these [A] chords and their

*) The explanation which is here given of Figs. 70 and 71 will be found materially different from that given of the same passages in the above mentioned Article. See Grove's Dic., Vol. II, p. 345.

§ 89. UNPREPARED ENTRANCE OF ATTENDANT CHORDS. 65

Primary chords extend in one case over four measures and in the other over three, they become thereby Interpolated keys. The difference between Compound Modulation and a succession of Interpolated keys is here well illustrated: in the former the ultimate key is of course *different* from the first one, while in the latter the original key is momentarily superseded by the Interpolated keys, but soon reassumes its rightful position in the foreground.

Fig. 71.

[A] of III

etc.

III [A] of V V*)

When an [A] chord appears without preparation there is usually a Structural connection which is not shown in the notes. For instance, in Fig. 71 if the first [A] chord is taken as a chord of the Major 9th, and the second as a chord of the Minor 9th, connecting notes become apparent as shown in Fig. 72, which is a reproduction of the harmonic progressions in Fig. 71, with the [A] chords in the fuller forms.

Fig. 72.

[A] of III, III,

[A] of V, V.

*) This chord is taken with a Minor Third: the following measures show that the key of B Minor is not established, E Minor soon coming into prominence.

This is always the case in regularly resolving a Diminished 7th or Augmented $\frac{6}{5}$ as in §§ 20 and 31, the connecting note being the *omitted* root of the Diminished 7th or Augmented 6th. A Modulation could have been made in Fig. 71 by establishing the key of *G* which is touched in the fifth bar, or by establishing the key of *B* Minor which is touched in the last measure.

Another example of Modulation without visible connection is given in Fig. 73, the second chord having no apparent connection with the first. But if the second chord is written as in Fig. 74, it will be seen to be an inversion of the Augmented $\frac{6}{5}$ derived from the root *G*, the Dominant of the old key, and therefore *common to both keys*.

Fig. 73.

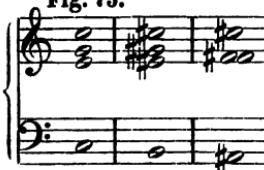


Fig. 74.



This illustrates the process of Modulation described in § 38 as "Resolving an Augmented $\frac{6}{5}$ as if it were a Dominant 7th chord in another key". (The Modulation shown in Fig. 52 might be explained in a similar manner, as the second chord written enharmonically becomes the Augmented $\frac{6}{5}$ derived from the Supertonic of the old key, thus being *common to both keys*.)

§ 90. A Modulation can also be formed even when there is no common note (either actually present or implied in the construction) to connect the last chord of the old key and the first chord of the new key, *if the laws regarding the progression of parts are not broken*. Such Modulations are however not recommended to the student, as the Tonality is too unsettled to take the place of *Structural connection*. (See § 3.)

§ 91. In reviewing the development of the Modern Harmonic System, the tendency toward the use of Attendant chords and Interpolated keys is seen to have been not only marked but ever increasing, and it is safe to say that their use has not yet received its fullest development.

While Interpolated keys are useful in giving variety to the harmonic structure, the boundaries of the principal key being, in a certain sense, enlarged by their use, the young composer is warned against too frequently following these seductive by-paths, for if the main key is kept too much in the background it will be entirely lost to the view and the unity of the composition seriously affected.

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